HCD-M500AV

SERVICE MANUAL

US Model

Ver 1.1 2001. 07

HCD-M500AV is the tuner, deck, CD and amplifier section in MHC-M500AV.

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CD SECTION	Model Name Using Similar Mechanism	HCD-MC3AV
	CD Mechanism Type	CDM-46B1
	Optical Pick-up Name	KSM-213BFN/C2NP
TAPE DECK SECTION	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	TCM-230AWR21

SPECIFICATIONS

Amplifier section
U.S.A models:
AUDIO POWER SPECIFICATIONS
POWER OUTPUT AND TOTAL HARMONIC DISTORTION:
With 6 Ω loads both channels driven, from 120 – 10,000 Hz; rated 75 W per channel minimum RMS power, with no more than 10% total harmonic distortion from 250 mW to rated output.

Front Speaker:
Continuous RMS power output
75 + 75 W
(6 Ω at 1 kHz, 10% THD)
Total harmonic distortion
less than 0.09%
(6 Ω at 1 kHz, 40 W)

Center Speaker:
Continuous RMS power output
35 W
(6 Ω at 1 kHz. 10% THD)

Rear Speaker:
Continuous RMS power output
35 + 35 W
(6 Ω at 1 kHz, 10% THD)

Inputs
VIDEO/MD IN (phono jack):
voltage 250 mV/450 mV,
impedance 47 kΩ
DVD
FRONT (phono jacks): voltage 450 mV,
impedance 47 kΩ
REAR (phono jacks): voltage 450 mV,
impedance 47 kΩ
CENTER (phono jacks): voltage 450 mV,
impedance 47 kΩ
WOOFER (phono jacks): voltage 450 mV,
impedance 47 kΩ

Outputs
PHONES (stereo phone jacks):
accepts headphones of 8 Ω or more
FRONT SPEAKER: accepts impedance of 6 to 16 Ω
REAR SPEAKER: accepts impedance of 6 to 16 Ω
CENTER SPEAKER: accepts impedance of 6 Ω
SUPER WOOFER: voltage 1 V, impedance 1 kΩ

— Continued on next page —

COMPACT COMPONENT SYSTEM

9-929-288-12
2001G0200-1
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Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

CD player section

System	Compact disc and digital audio system
Laser	Semiconductor laser (λ =780 mm) Emission duration: continuous
Laser output	Max. 44.6 μW* * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Frequency response	2 Hz – 20 kHz (± 0.5 dB)
Wavelength	780 – 790 nm
Signal-to-noise ratio	More than 90 dB
Dynamic range	More than 90 dB
CD OPTICAL DIGITAL OUT (Square optical connector jack, rear panel)	
Wave length	600 nm
Output level	–18 dBm

Tape player section

Recording system	4-track 2-channel stereo
Frequency response	40 – 13,000 Hz (± 3 dB), using Sony TYPE I cassette

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	87.5 – 108.0 MHz
Antenna	FM lead antenna
Antenna terminals	75 Ω unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range	530 – 1,710 kHz (with the interval set at 10 kHz) 531 – 1,710 kHz (with the interval set at 9 kHz)
Antenna	AM loop antenna
Antenna terminals	External antenna terminal
Intermediate frequency	450 kHz

General

Power requirements	120 V AC, 60 Hz
Power consumption	210 W
Dimensions (w/h/d)	Approx. 280 × 373 × 468 mm
Mass	Approx. 11.0 kg
Supplied accessories:	AM loop antenna (1) Remote commander (1) Batteries (2) FM lead antenna (1) Speaker cords (2) Center speaker pads (4) Manual connecting cord (1)

Design and specifications are subject to change without notice.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

SAFETY CHECK-OUT
(US model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

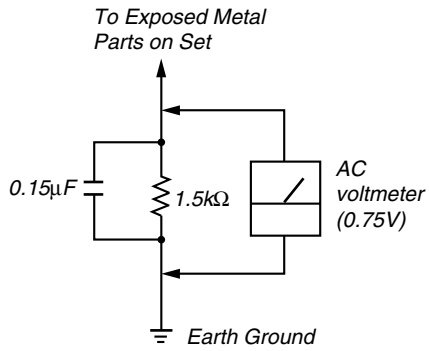

Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveform is output repeatedly.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

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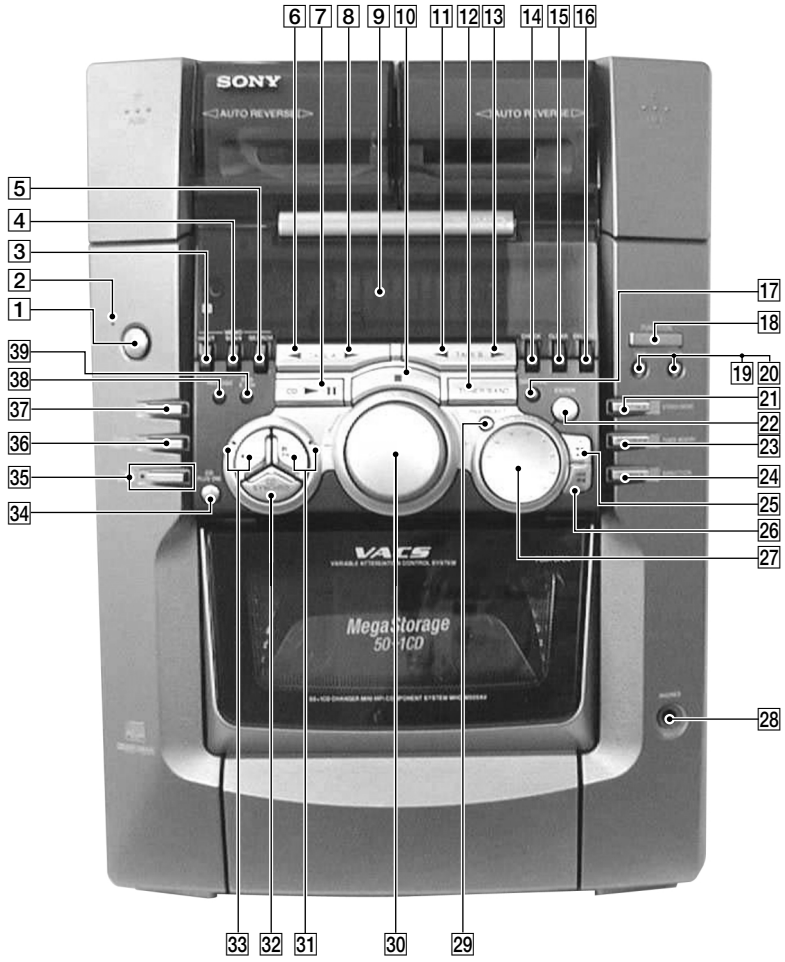
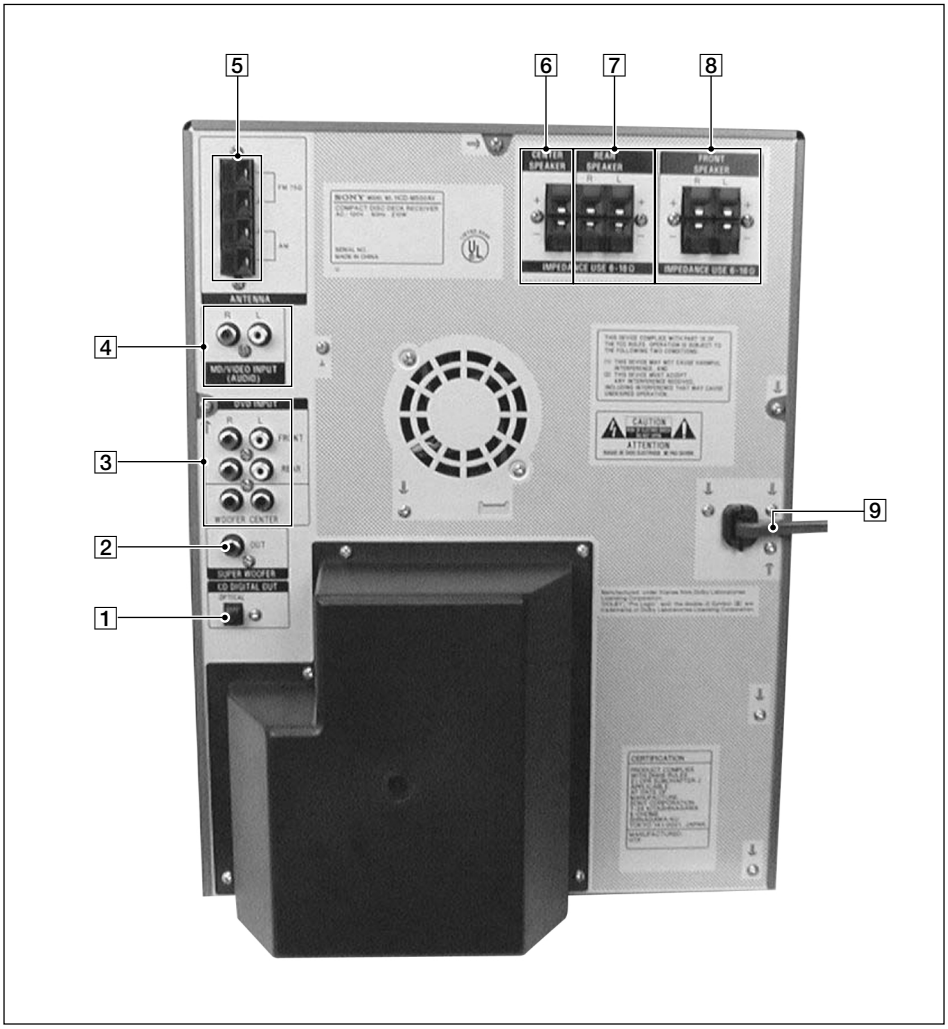
SECTION 1
GENERAL

FRONT PANEL



1 I/⏻ button
2 STANDBY indicator
3 MEMO INPUT button
4 MEMO SCAN button
5 MEMO SEARCH button
6 TAPE A ◁ button and indicator
7 CD ▷II button and indicator
8 TAPE A ▷ button and indicator
9 Display window
10 ■ (STOP) button
11 TAPE B ◁ button and indicator
12 TUNER/BAND button
13 TAPE B ▷ button and indicator
14 CHECK button
15 CLEAR button
16 DELETE button
17 GROOVE button and indicator
18 FUNCTION button
19 DSP button and indicator
20 DBFB button
21 CONTINUE/STEREO/MONO button
22 ENTER button
23 PROGRAM/TUNER MEMORY button
24 SHUFFLE/DIRECTION button
25 + ▶▶ ▶▶I button
26 I◀◀ ◀◀ – button
27 SELECTOR dial
28 PHONES jack
29 FILE SELECT button
30 VOLUME knob
31 II PAUSE button and indicator
32 CD SYNCHRO button
33 ● REC button
34 CD PLUS ONE button
35 TIMER SELECT button and indicator
36 CLOCK TIMER SET button
37 DISPLAY button
38 PROLOGIC button and indicator
39 DVD5.1CH button and indicator

REAR PANEL

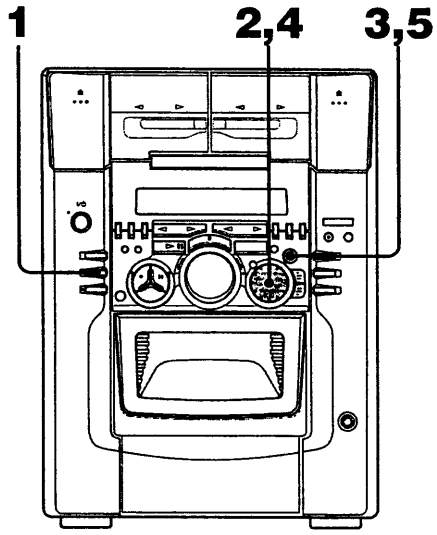


1 CD DIGITAL OUT connector
2 SUPER WOOFER jack
3 DVD INPUT jack
4 MD/VIDEO INPUT (AUDIO) jack
5 ANTENNA terminal
6 CENTER SPEAKER terminal
7 REAR SPEAKER terminal
8 FRONT SPEAKER terminal
9 AC power cord

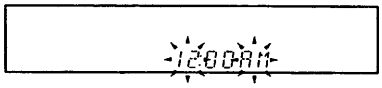
This section is extracted from instruction manual.

Step 3: Setting the time

You must set the time before using the timer functions.

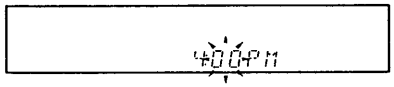


1 Press CLOCK TIMER SET.
The hour indication flashes.



2 Turn SELECTOR to set the hour.

3 Press ENTER.
The minute indication flashes.



4 Turn SELECTOR to set the minute.

5 Press ENTER.
The clock starts working.

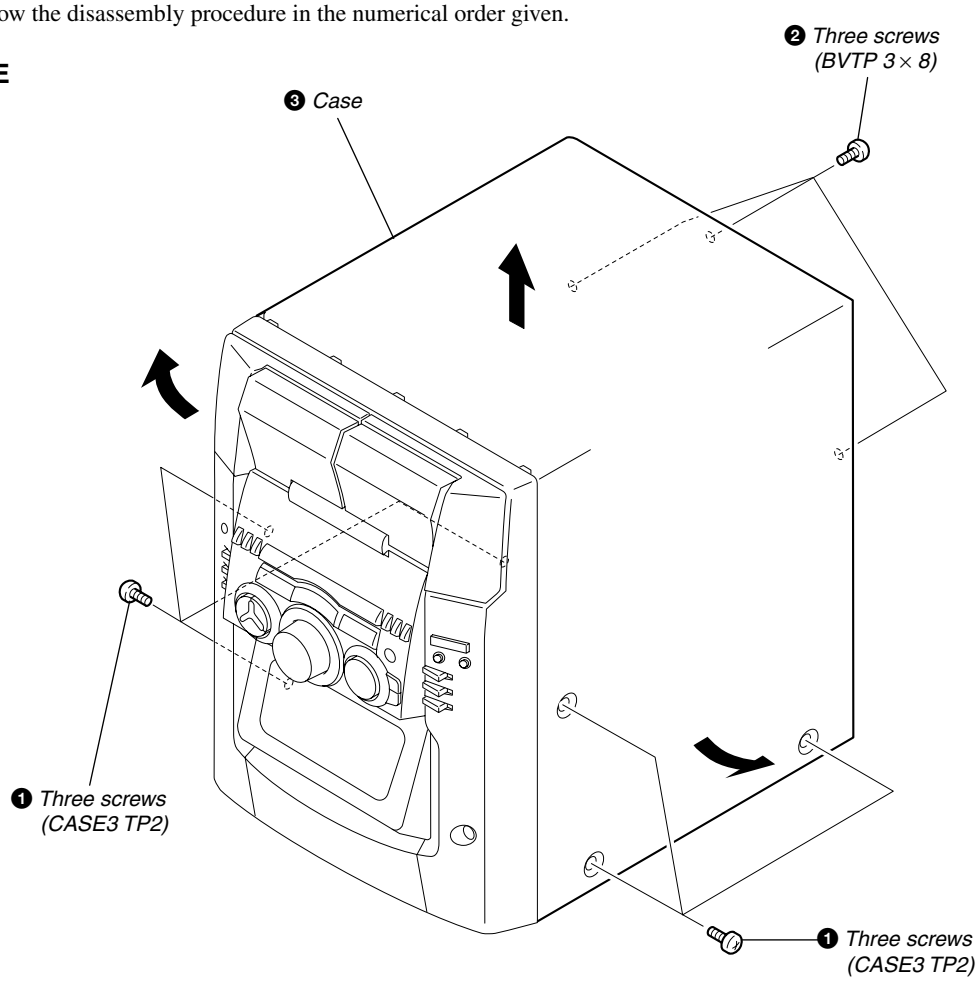
Tips

- If you've made a mistake, start over from step 1.
- You cannot set the time in the Power Saving Mode (see page 11). To cancel the Power Saving Mode and to set the time, do the following:
  1 While the power is off, press DISPLAY repeatedly until the clock display appears.
  2 Do steps 1 through 5 above.
- If you want to display the demo mode, press DISPLAY when the power is off.
- The above explanation shows you how to set the time while the power is off. To change the time while the power is on, do the following:
  1 Press CLOCK TIMER SET.
  2 Turn SELECTOR to select "SET CLOCK".
  3 Press ENTER.
  4 Do steps 2 through 5 above.

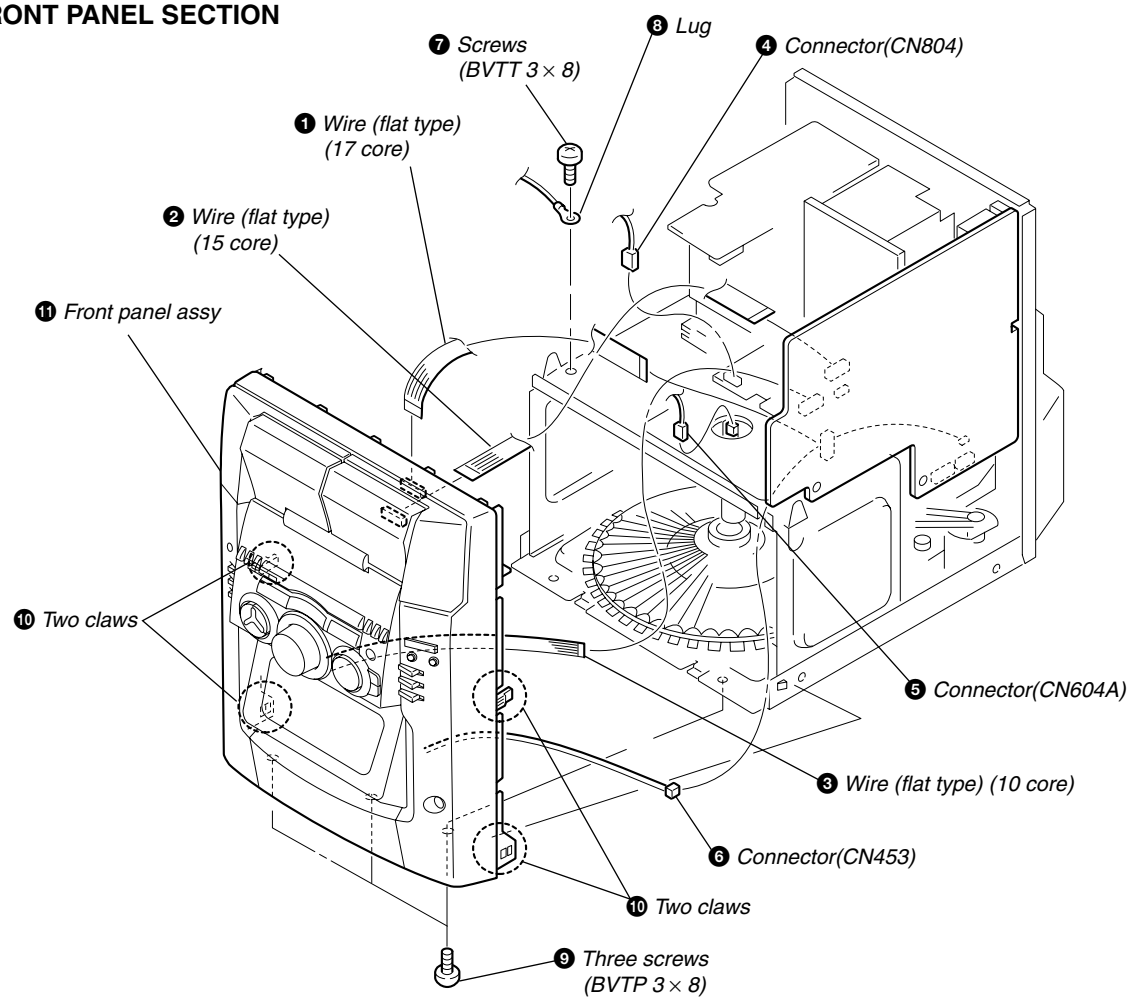
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

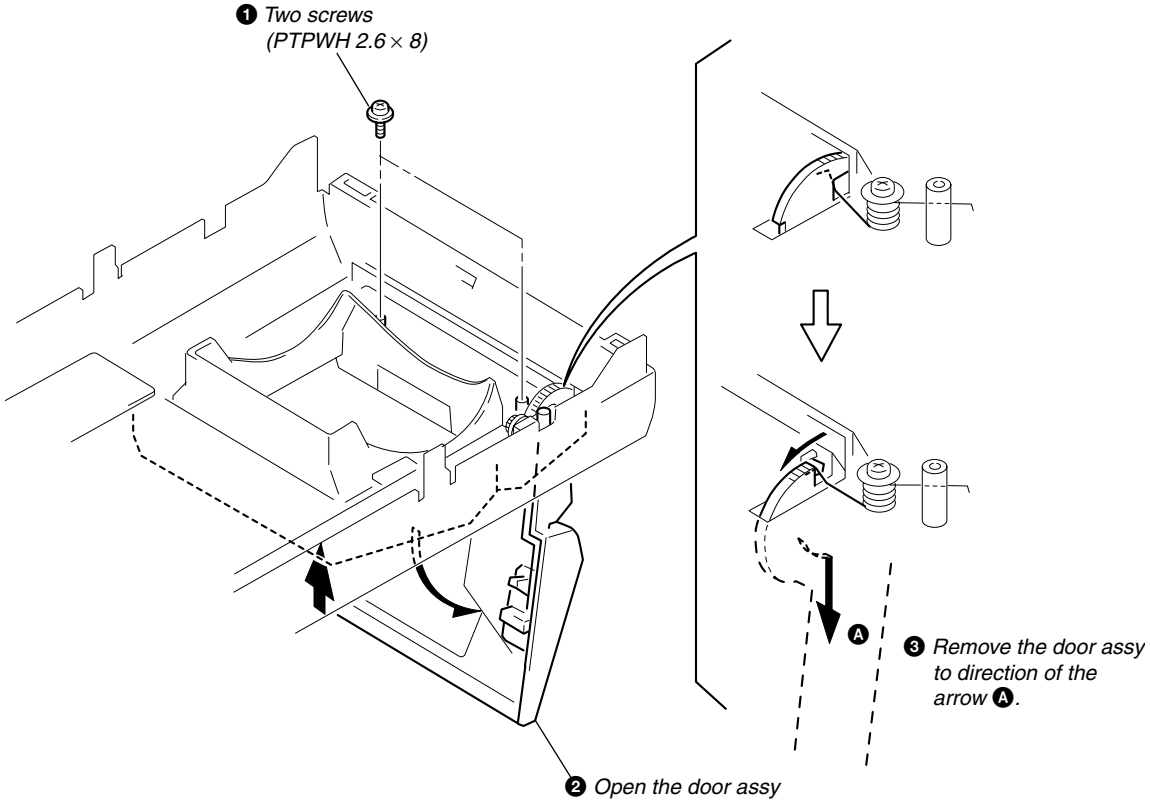
2-1. CASE



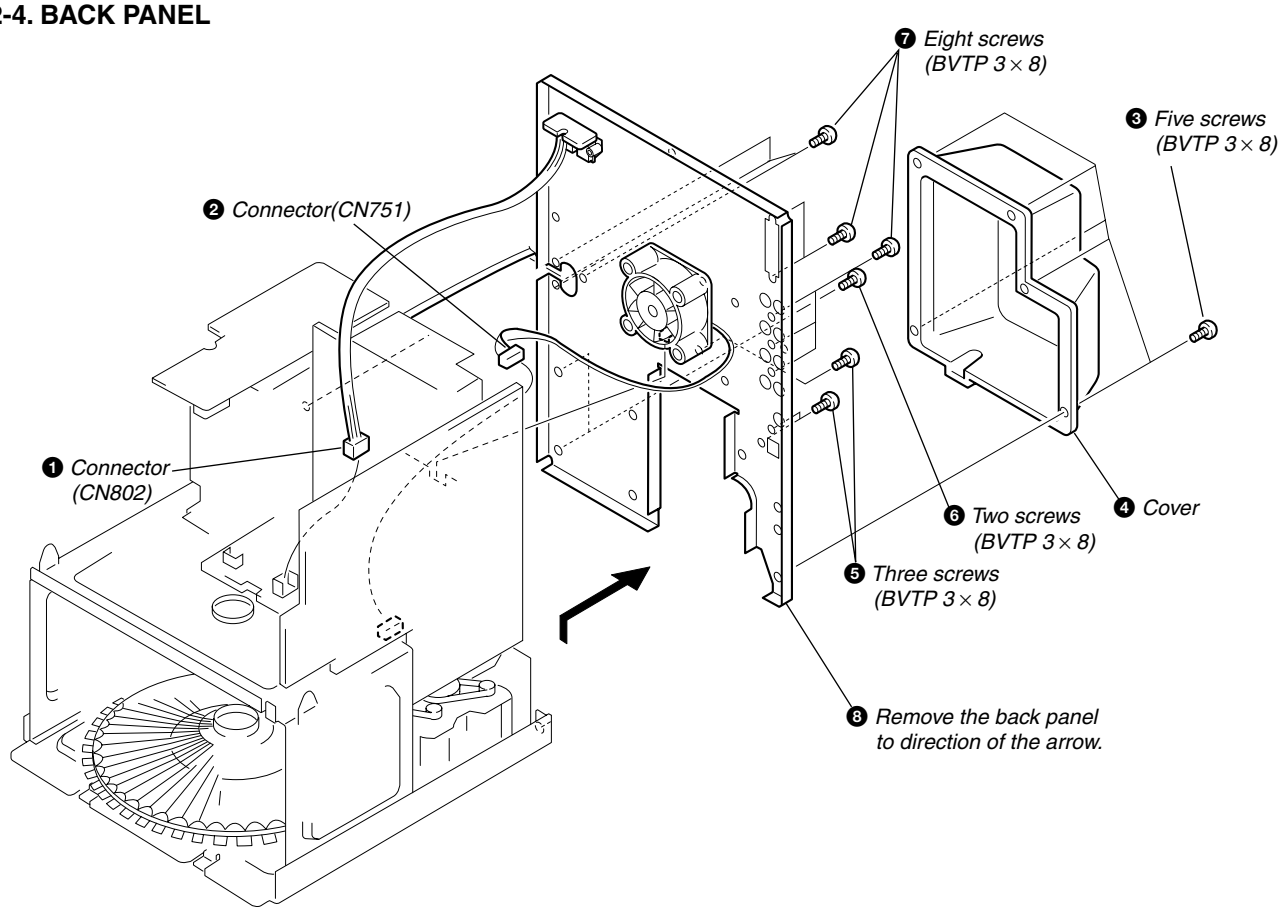
2-2. FRONT PANEL SECTION



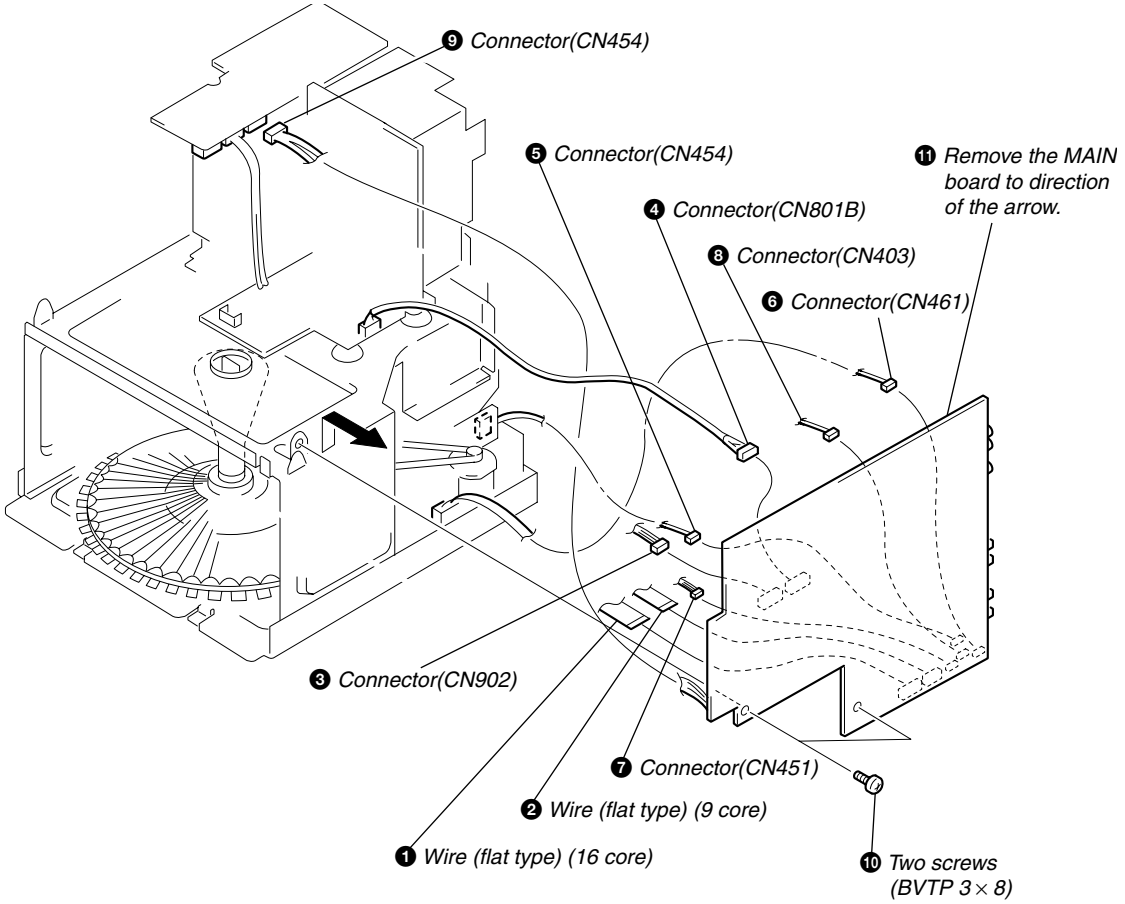
2-3. DOOR ASSY



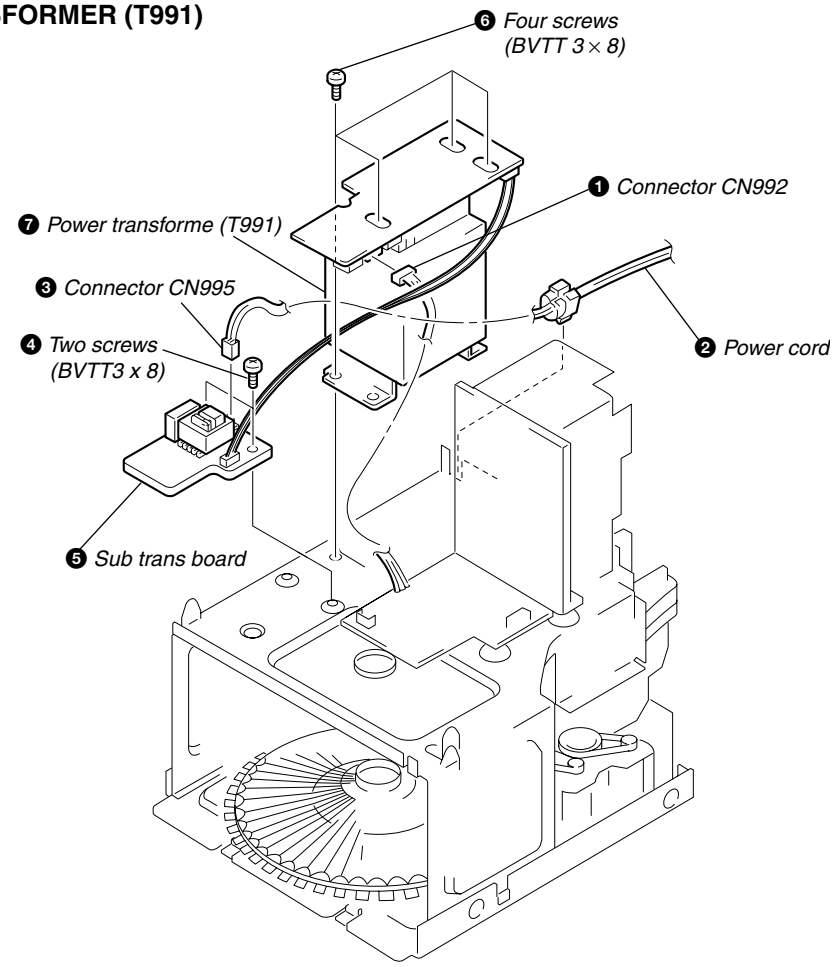
2-4. BACK PANEL



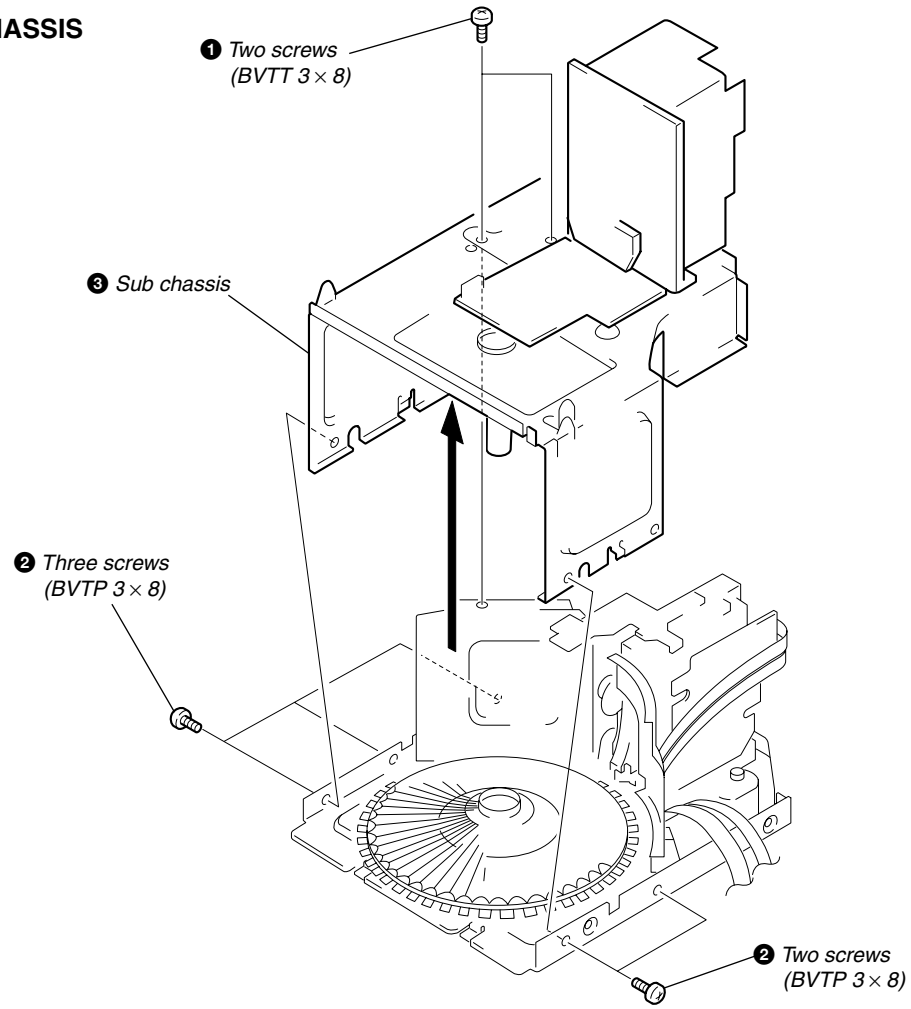
2-5. MAIN BOARD



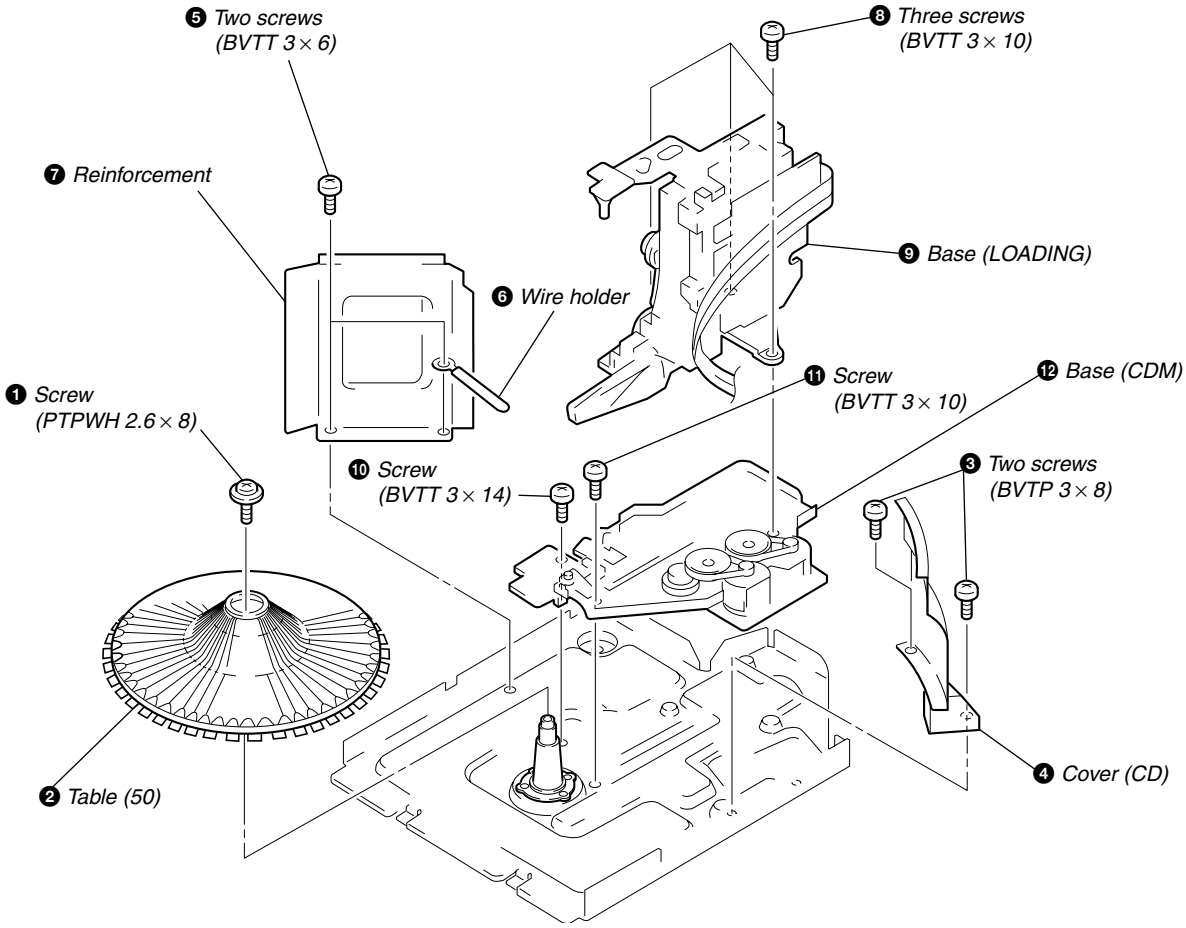
2-6. POWER TRANSFORMER (T991)


❻ Four screws (BVTT 3 × 8)
❶ Connector CN992
❼ Power transforme (T991)
❸ Connector CN995
❹ Two screws (BVTT3 x 8)
❷ Power cord
❺ Sub trans board

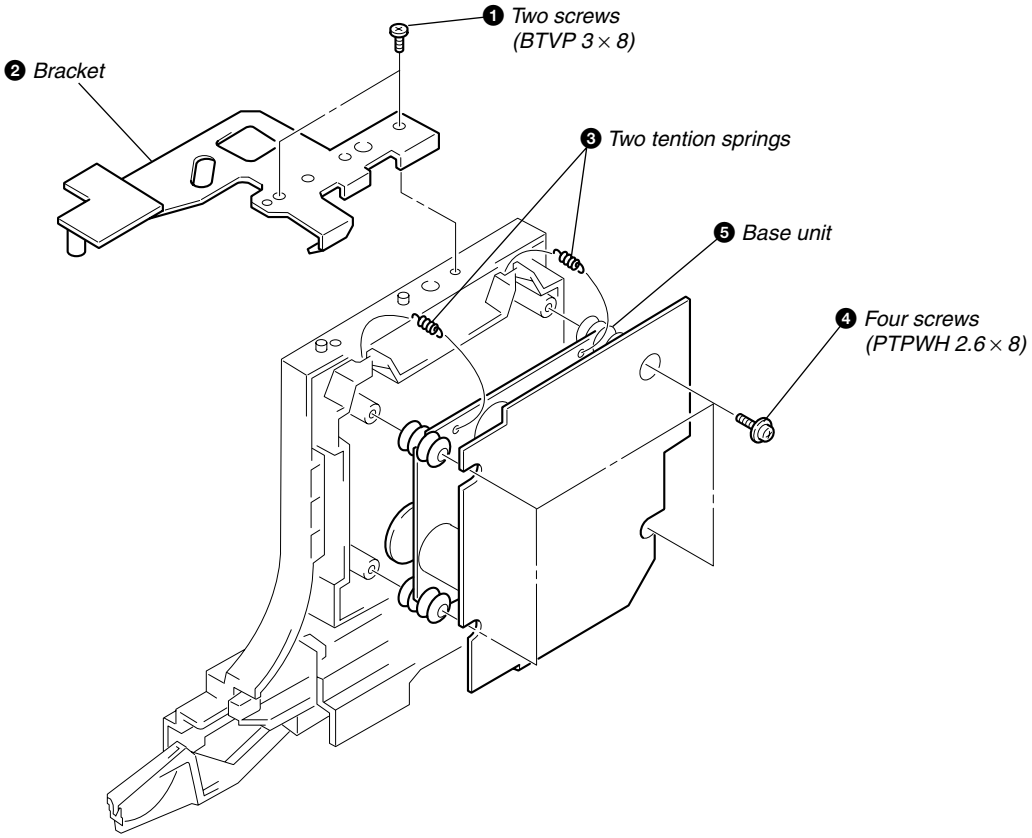
2-7. SUB CHASSIS



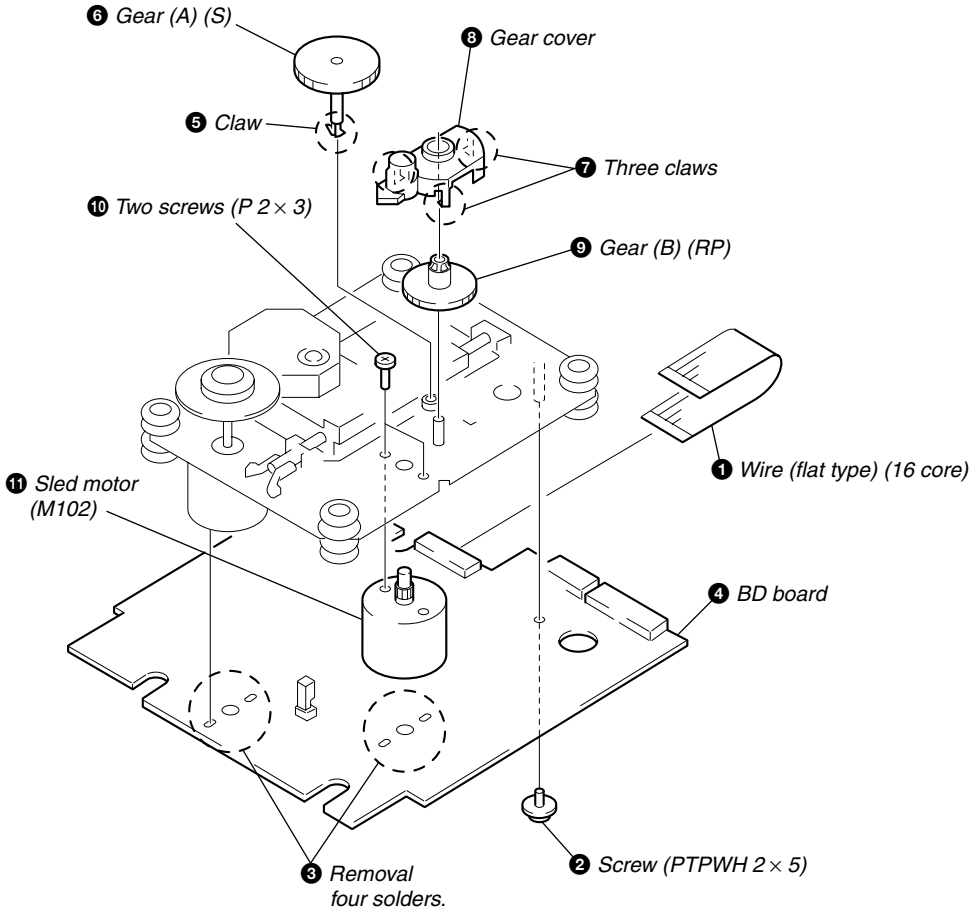
2-8. CD MECHANISM DECK SECTION



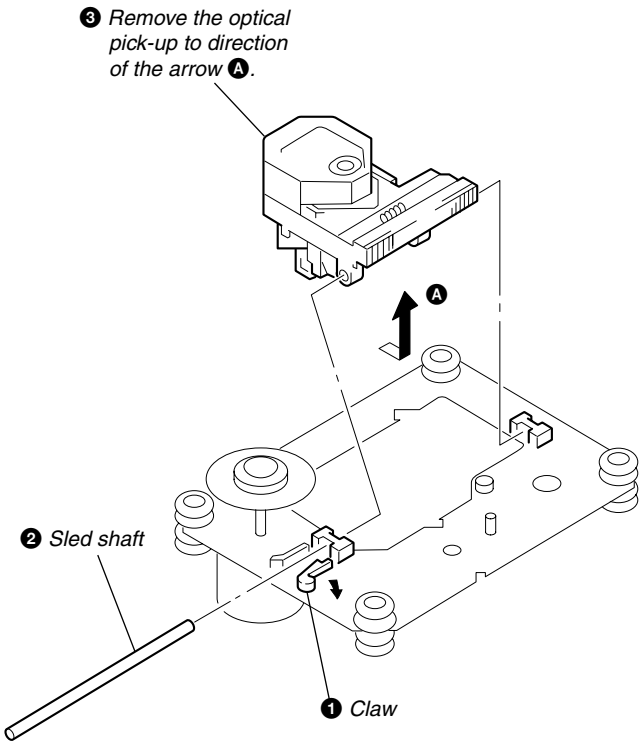
2-9. CD BASE UNIT



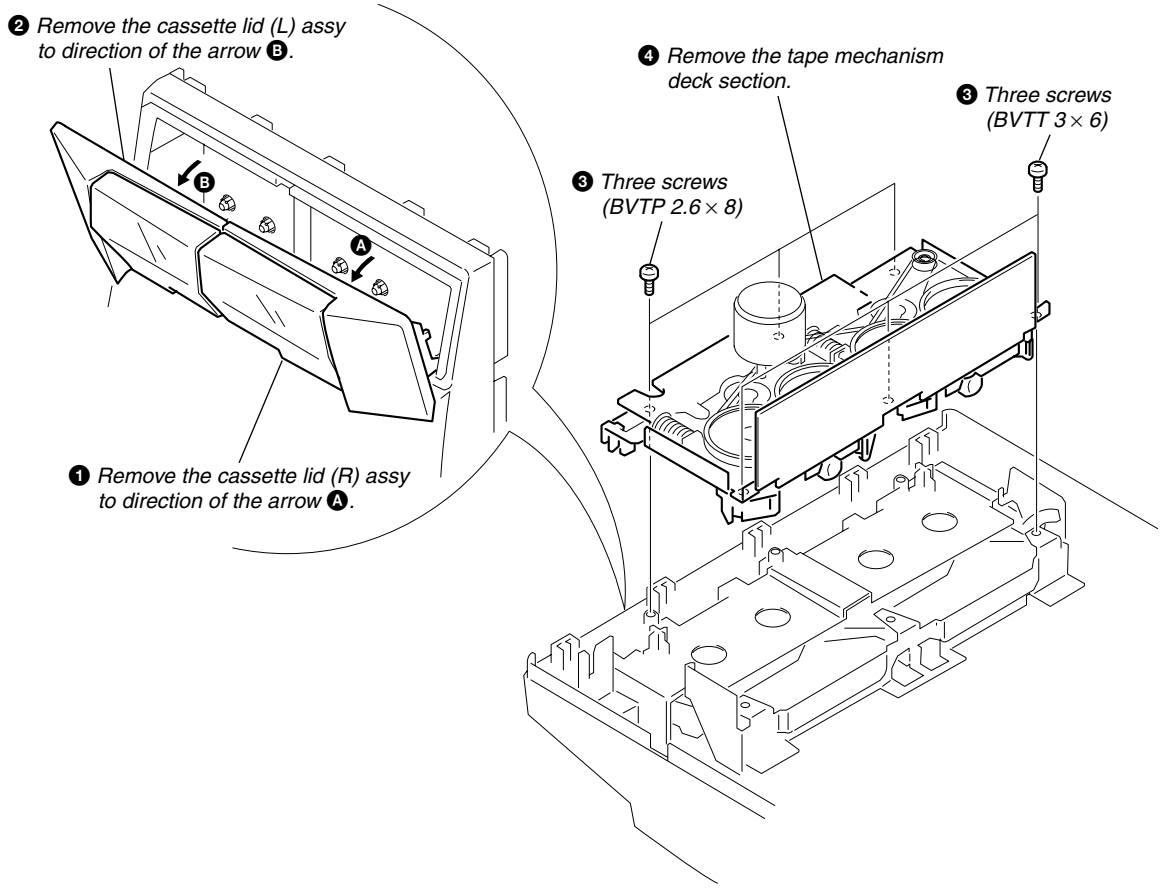
2-10. BD BOARD, SLED MOTOR (M102)



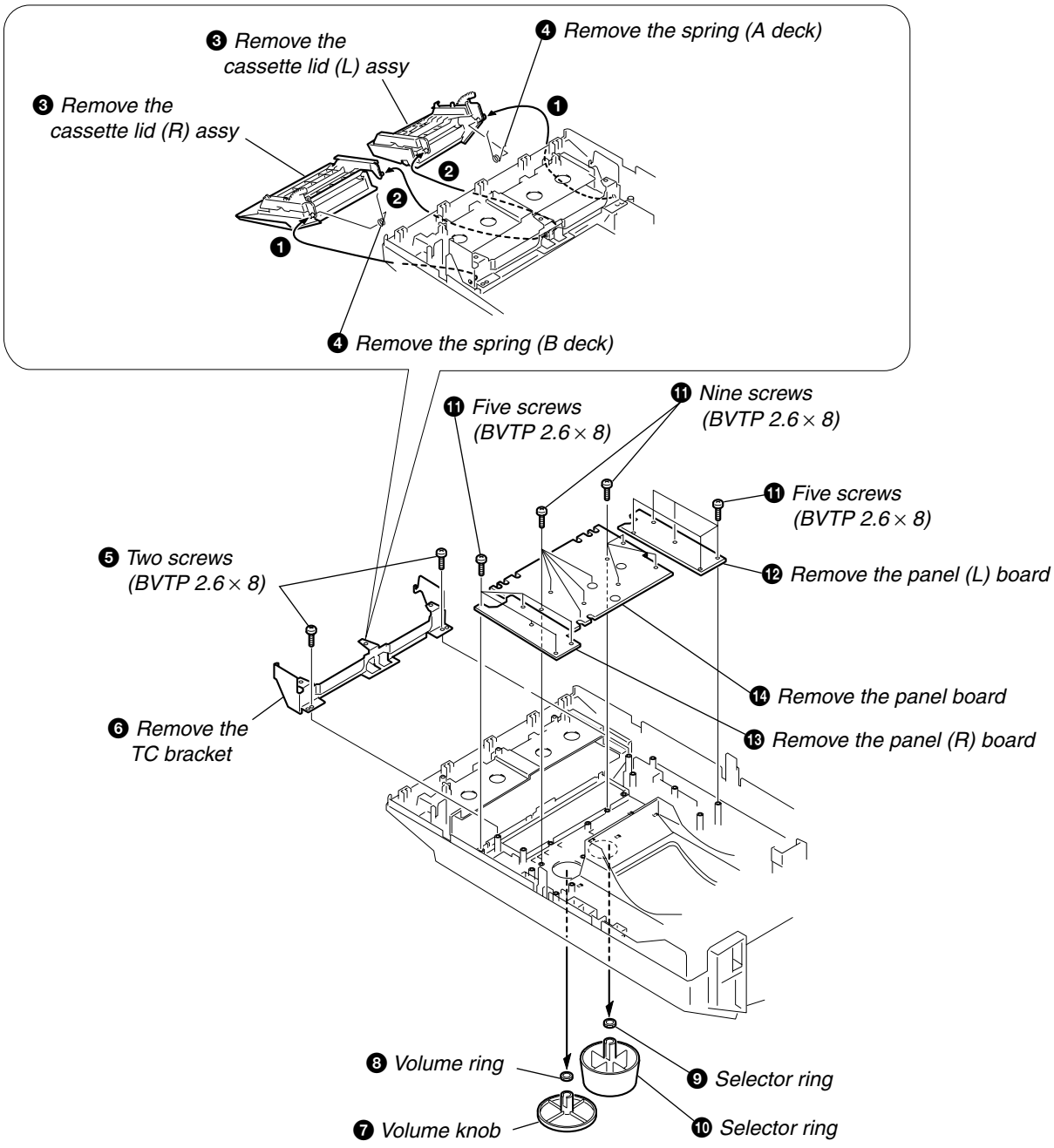
2-11. OPTICAL PICK-UP



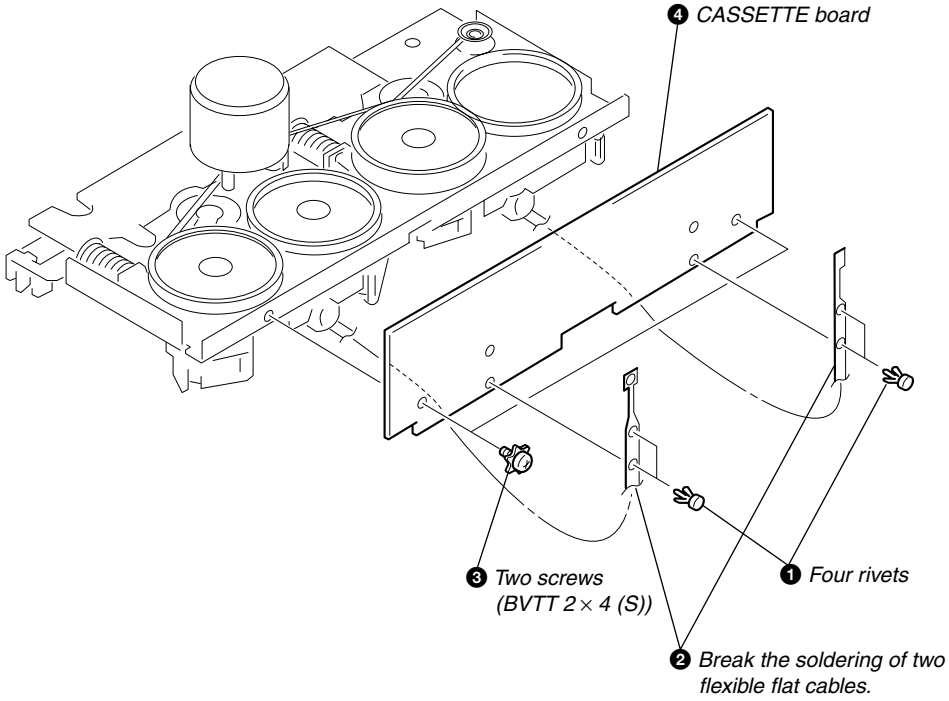
2-12. TAPE MECHANISM DECK SECTION


❷ Remove the cassette lid (L) assy to direction of the arrow Ⓑ.
❹ Remove the tape mechanism deck section.
❸ Three screws (BVTT 3 × 6)
❸ Three screws (BVTP 2.6 × 8)
Ⓑ
Ⓐ
❶ Remove the cassette lid (R) assy to direction of the arrow Ⓐ.

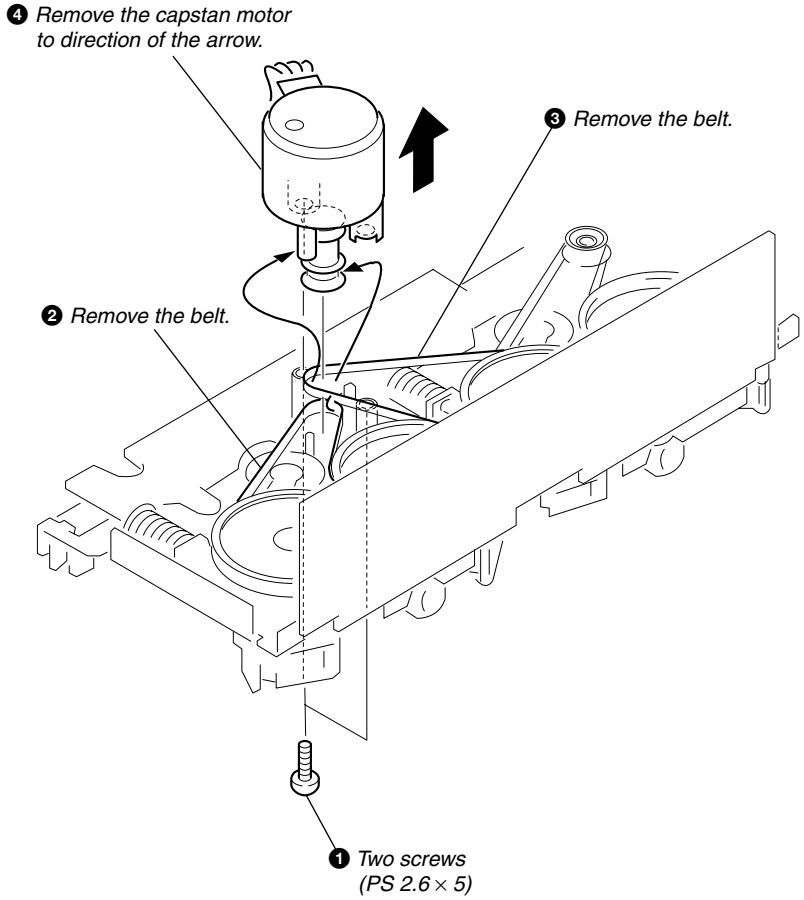
2-13. PANEL BOARD


❸ Remove the cassette lid (L) assy
❹ Remove the spring (A deck)
❸ Remove the cassette lid (R) assy
❶
❷
❷
❶
❹ Remove the spring (B deck)
⓫ Five screws (BVTP 2.6 × 8)
⓫ Nine screws (BVTP 2.6 × 8)
⓫ Five screws (BVTP 2.6 × 8)
❺ Two screws (BVTP 2.6 × 8)
⓬ Remove the panel (L) board
⓮ Remove the panel board
❻ Remove the TC bracket
⓭ Remove the panel (R) board
❽ Volume ring
❾ Selector ring
❼ Volume knob
❿ Selector ring

2-14. CASSETTE BOARD



2-15. CAPSTAN MOTOR (M1)



SECTION 3
TEST MODE

[MC Cold Reset]

* The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press the three buttons [■], [ENTER] and [I/⏻] at the same time.
2. The fluorescent indicator tube turns off for a moment and the RAM is reset to the initial conditions.

[MC Hot Reset]

* This mode resets the set with the preset data kept stored in the memory. This hot reset mode is performed also when the power cord is plugged in and out.

Procedure:

1. Press the three buttons [■], [ENTER] and [FUNCTION] at the same time.
2. The fluorescent indicator tube turns off for a moment and the RAM is reset to the initial conditions.

[CD Initial]

* The CD INITIAL clears all of the CD related data. Execute this mode when returning the set to the customer.

Procedure:

1. Press the three buttons [■], [ENTER] and [CONTINUE/STEREO/MONO] at the same time.
2. The message "STANDBY" appears on the fluorescent indicator tube and the CD related data is reset to the initial conditions.

[CD Line Test]

* The CD Line test displays the rotating time required for one rotation by rotating the disc tray.

Procedure:

1. Press the three buttons [■], [ENTER] and [CLOCK/TIMER SET] at the same time. The CD PLAY LED and the CD PAUSE LED flash alternately and the disc tray starts rotation.
2. The message "xx << y.y" appears on the fluorescent indicator tube. The left numbers count up the discs starting from 1 to 51. The left numbers "y.y" indicate the rotating time required for one rotation by rotating the disc tray.
3. To exit the CD LINE test mode, execute the MC Hot Reset.

[CD Memo All Clear]

* The mode clears all contents of the CD disc memo. Execute this mode when returning the set to the customer.

Procedure:

1. Press the two buttons [MEMO INPUT] and [ENTER] at the same time.
2. The message "ALL ERASE" appears on the fluorescent indicator tube and the CD disc memo is all cleared.

[GC Test Mode]

* This mode checks microprocessor version number, keys, fluorescent tubes, LEDs and VACS (Variable Attenuation Control System).

Procedure:

1. Press the three buttons [■], [ENTER] and [DISPLAY] at the same time. The set enters the GC test mode, and all of the fluorescent tubes and LEDs turn on.
2. From this state, any one of the three modes MODEL NAME, KEY CHECK and VACS can be selected. Go to step 3 to enter the MODEL NAME test mode. Go to step 5 to enter the KEY CHECK test mode. Go to step 11 to enter the VACS test mode.
3. [MODEL NAME test mode] From the state of step 2, press the [CONTINUE/STEREO/MONO] button. Every pressing of the [CONTINUE/STEREO/MONO] button advances the following check modes and displays in the given order. Model name display, destination display, MC version display, GC version display, DC version display, VC version display and CC version display.
4. To exit the GC test mode and to return to the STANDBY mode, press the [■], [ENTER] and [DISPLAY] buttons again.
5. [KEY CHECK test mode] You can enter this mode directly from step 2. When you performed steps 3, perform steps 4, then 1 and 2 before starting the step 5.
   [KEY CHECK test mode] From the GC test mode, press the [PROGRAM/TUNER MEMORY] button to enter the key check mode.
   The display: K 1, J 0, V 0 appears.
6. The value after K indicates the number of times that the key is pressed. 1 is displayed because the [PROGRAM/TUNER MEMORY] button has already been pressed.
7. When other keys are pressed one after another, the key count increases up to 43. The keys which have already been pressed, are not counted.
8. The value after J indicates the number of clicks that the JOG dial is rotated. The clockwise rotation increases the count value. The counter-clockwise rotation decreases the count value.
9. The value after V also indicates amount of rotation of volume control. The clockwise rotation increases the count value. The counter-clockwise rotation decreases the count value.
10. To exit the GC test mode and to return to the STANDBY mode, press the [■], [ENTER] and [DISPLAY] buttons again.
11. [VACS test mode] You can enter this mode directly from step 2. When you performed steps 3, perform steps 4, then 1 and 2 before starting the step 5.
    [VACS test mode] From the GC test mode, press the [SHUFFLE] button to enter the VACS attenuation check mode. The display: VOL NORMAL appears.
12. To exit the GC test mode and to return to the STANDBY mode, press the [■], [ENTER] and [DISPLAY] buttons again.

[Aging Mode]

The decks A and B are operated automatically for aging purpose. When errors occur during aging, causes of errors are displayed and the aging mode is stopped.

How to enter the aging mode

1. Turn on the main power. Install a playback tape to deck A and install a blank tape to deck B.
2. Select TAPE A with the [FUNCTION] button.
3. Press the three buttons of [■], [ENTER] and [SHUFFLE] at the same time to enter the aging mode.

How to exit the aging mode.

Turn off the main power.

1. Rewind the tapes A and B. Tapes stop at the shut-off of tape A and the aging mode advances to the next step.
   The message: TAPE A AG-1 appears.

2. The tape A is played back in the FWD mode. After two minutes of the FWD playback, the aging mode advances to the next step.
   The message: TAPE A AG-2 appears.
3. The tape A runs in fast forward. After two minutes of fast forward, or at the shut-off point, the tape is stopped and the aging mode advances to the next step.
   The message: TAPE A AG-3 appears.
4. The tape A is played back in the RVS mode. After two minutes of the RVS playback, the aging mode advances to the next step.
   The message: TAPE A AG-4 appears.
5. The tape A is rewound and stops at the shut-off. The aging mode advances to the next step.
   The message: TAPE A AG-5 appears.
6. The tape B is played back in the FWD mode. After two minutes of the FWD playback, the aging mode advances to the next step.
   The message: TAPE B AG-2 appears.
7. The tape B runs in fast forward. After two minutes of fast forward, or at the shut-off point, the tape is stopped and the aging mode advances to the next step.
   The message: TAPE B AG-3 appears.
8. The tape B is played back in the RVS mode. After two minutes of the RVS playback, the aging mode advances to the next step.
   The message: TAPE B AG-4 appears.
9. The tape B is rewound and stops at the shut-off. The aging mode advances to the next step.
   The message: TAPE B AG-5 appears.

[AM TUNER STEP 9 kHz/10 kHz Selection Mode]

* Either the 9 kHz step or 10 kHz step can be selected for the AM channel step.

Procedure:

1. Turn on the power and select TUNER using the FUNCTION button.
2. Select AM with the TUNER/BAND button and turn off the power.
3. Press the two buttons ENTER and I/⏻ at the same time. The main power is turned on and the other frequency step of the previous mode is selected and displayed. “AM 9 k STEP” or “AM 10 k STEP”

[CD SRAM Test Mode]

Procedure:

1. Turn on the power and select CD using the FUNCTION button.
2. Press the three buttons ■, ENTER and DBFB at the same time.
3. The message “SRAM OK” appears on the fluorescent indicator tube.

[GC VACS ON/OFF Mode]

Procedure:

1. Press the two buttons DELETE and I/⏻ at the same time.
2. The message “VACS ON” or “VACS OFF” appears on the fluorescent indicator tube.

SECTION 4
MECHANICAL ADJUSTMENTS

• TAPE MECHANISM DECK SECTION

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback heads pinch rollers
   erase head rubber belts
   capstan idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

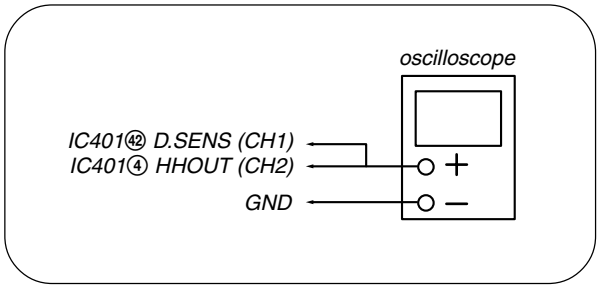
Mode	Torque meter	Meter reading
FWD	CQ-102C	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
REV	CQ-102RC	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	6.96 N • m to 14.02 N • m 71 to 143 g • cm (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	9.80 N • m 100 g or more (3.53 oz or more)
REV tension	CQ-403R	9.80 N • m 100 g or more (3.53 oz or more)

• CD MECHANISM DECK SECTION

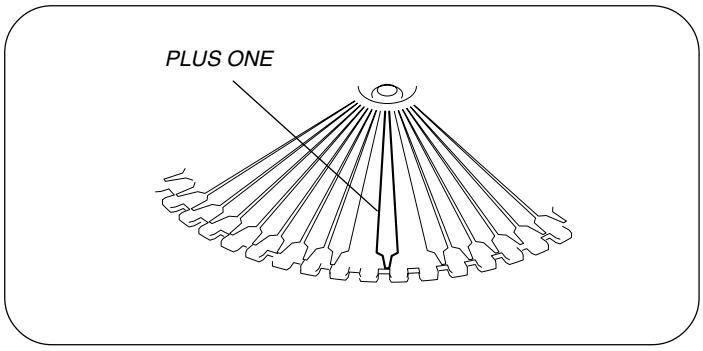
To adjust the mechanism section, enter the mechanism section adjustment mode.
For how to enter the mechanism section adjustment mode, refer to each adjustment section.

DISC SENSOR ALIGNMENT

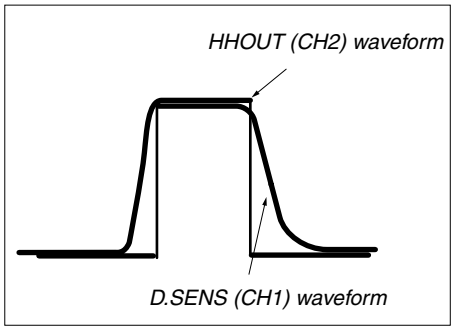
1. Make sure that there is no disc in the unit.
2. Connect an oscilloscope to IC401㊷, IC401④ of the MAIN board.

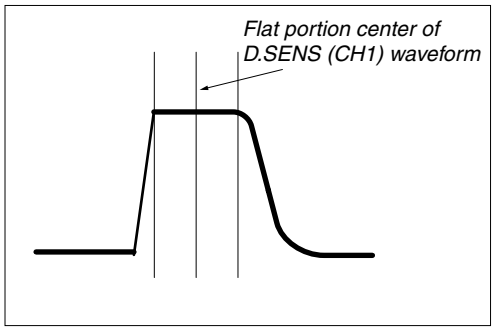


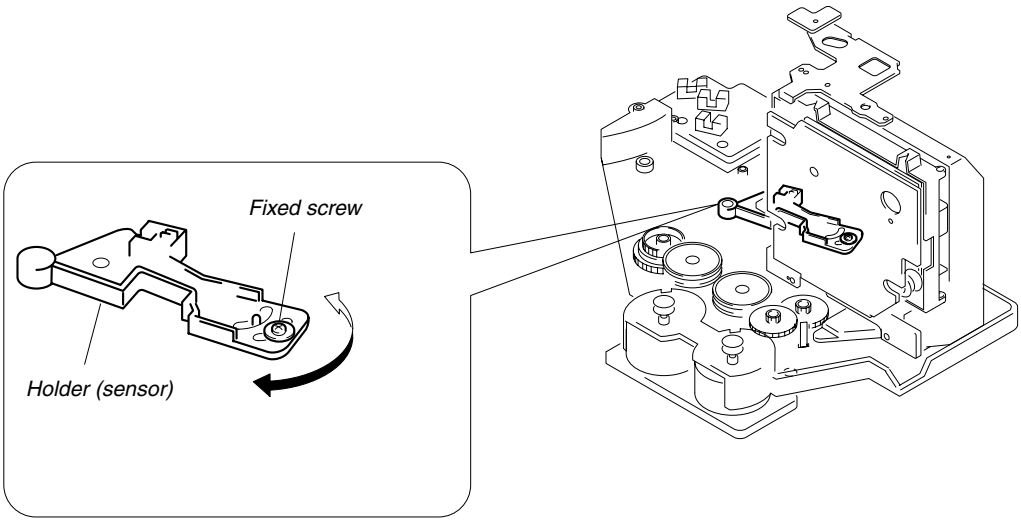
3. Press the [I/⏻] button to turn ON the power.
4. Press the [■] button, [ENTER] button and [CLOCK/TIMER SET] button simultaneously.



5. The disc table rotates in the clockwise direction. The disc table rotation time is displayed with “PLUS ONE” slit as a measuring point.
6. Measure the waveform of the oscilloscope when the disc table is rotating.
7. Move the holder (sensor) center so that the flat portion center at the top of the D.SENS (CH1) input waveform and the “H” center of HHOUT (CH2) coincide.





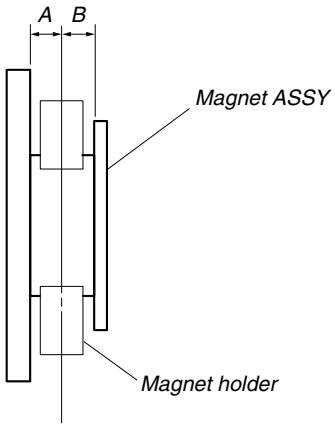


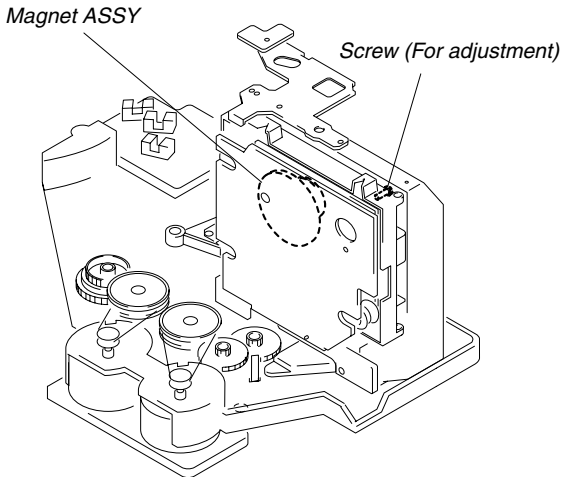
8. Tighten the fixed screw to fix the disc table, then press the CLEAR button.
9. The disc table rotates in the counterclockwise direction. Measure the waveform and make sure that the flat portion center at the top of the D.SENS (CH1) input waveform and the “H” center of HHOUT (CH2) coincide.
10. If the adjustment is not successful, press the CLEAR button to rotate the disc table in the clockwise direction, and perform steps 6 to 9.

Note: During the adjustment mode, the rotational direction is switched each time the CLEAR button is pressed.
Pressing the CHECK button enters the loading mode which will be described later. Pressing the CLEAR button rotates the disc table again.

MAGNET ASSY ALIGNMENT

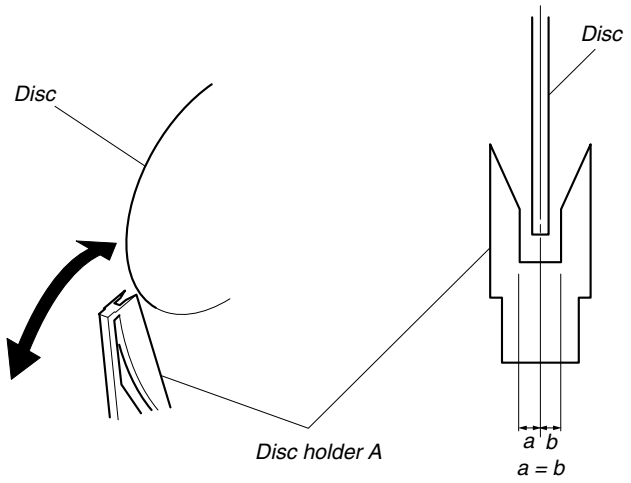
1. Check that there is no disc in the unit and then press the [I/⏻] button to turn ON the power. Open the door, and set a disc in the PLUS ONE slit.
2. Close the door, and while pressing the [■] button, [ENTER] button and [CLOCK/TIMER SET] button simultaneously.
3. Press the [CHECK] button, and set the loading mode.
4. Press the [+ ▷▷ ▷▷I] button and chuck the disc.
5. Adjust the magnet assembly and magnet holder so that A = B as shown in the figure.

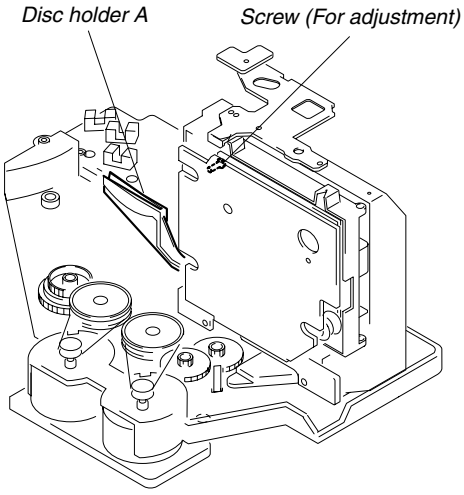




DISC HOLDER A ALIGNMENT

1. Check that there is no disc in the unit and then press the [I/⏻] button to turn ON the power. Open the door, and set a disc in the PLUS ONE slit.
2. Close the door, and while pressing the [■] button, [ENTER] button and [CLOCK/TIMER SET] button simultaneously.
3. Press the [CHECK] button, and set the loading mode.
4. Press the [+ ▷▷ ▷▷I] button and chuck the disc.
5. Press [+ ▷▷ ▷▷I] or [I◁◁ ◁◁ –] button to stop the disc holder A slightly away from the disc.
6. Rotate and adjust the adjusting screw so that the center of the disc and that of the disc holder coincide.





SECTION 5
ELECTRICAL ADJUSTMENTS

DECK SECTION | 0 dB = 0.775 V

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjust.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.

• Test Tape

Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

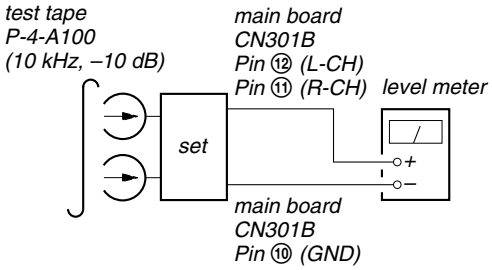
Record/Playback Head Azimuth Adjustment

DECK A/B

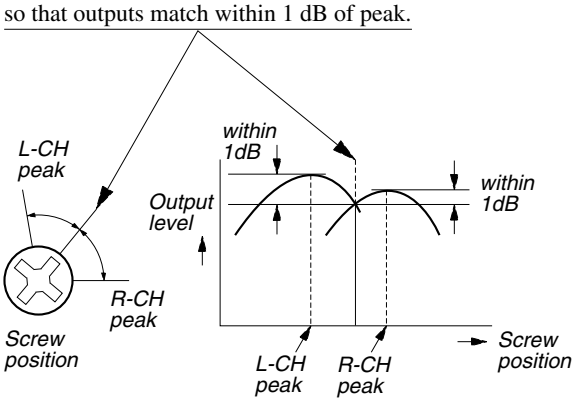
Note: Perform this adjustments for both decks

Procedure:

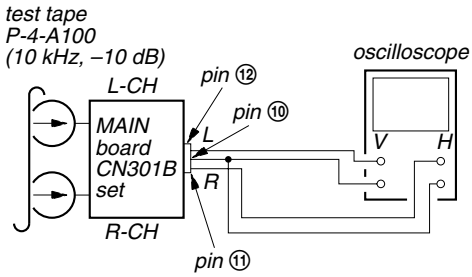
1. Mode: Playback

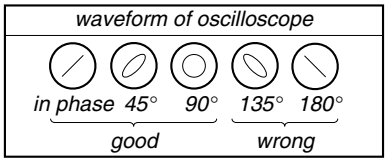


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.



3. Mode: Playback





4. After the adjustments, apply suitable locking compound to the pats adjusted.

Adjustment Location: Playback Head (Deck A).
Record/Playback/Erase Head (Deck B).

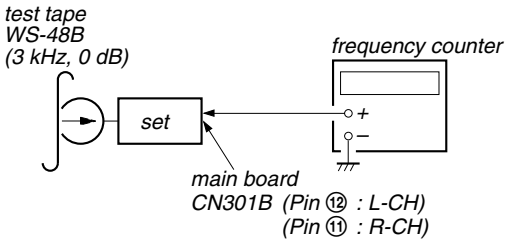
Tape Speed Adjustment DECK A/B

Note: Start the Tape Speed adjustment as below after setting to the test mode.

Procedure:

1. Press the [I/⏻] button to turn ON the power.
2. Press the [■] button, [ENTER] button and [TIMER SELECT] button simultaneously.
   (The "VOLUME" on the fluorescent indicator tube will blink while in the test mode.)
   To exit from the test mode, press the [I/⏻] button.

Mode: Playback



1. Insert the WS-48B into the deck.
2. Press the [▷] button on the deck.
3. Adjust RV1001 on the LEAF SW board so that frequency counter reads 3,000 ± 90 Hz.

Adjustment Location: LEAF SW board

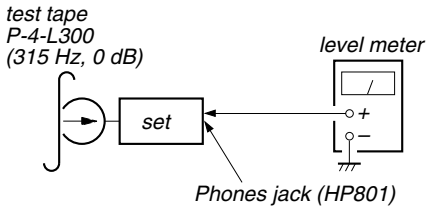
Sample Value of Wow and filter

W, RMS (JIS) within 0.3%
(test tape: WS-48B)

Playback level Adjustment DECK A/B

Procedure:

Mode: Playback



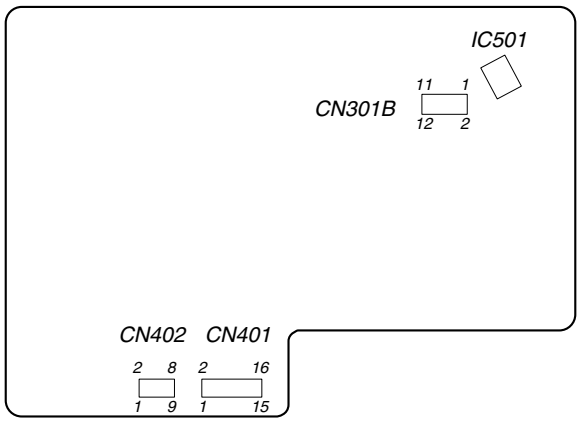
Adjust DECK A/B: VR301 (R-CH) so the level meter reading becomes the adjustment limits below.

Adjustment Level:

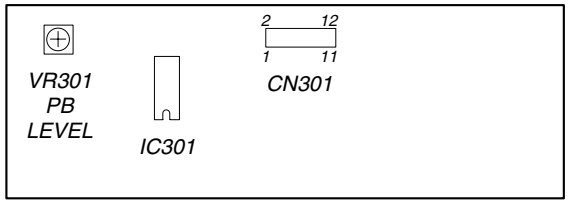
CN301 PB level: 155 to 275 mV (– 14 to – 9 dB) level difference between the channels: within ± 0.5 dB

Adjustment Location: CASSETTE board

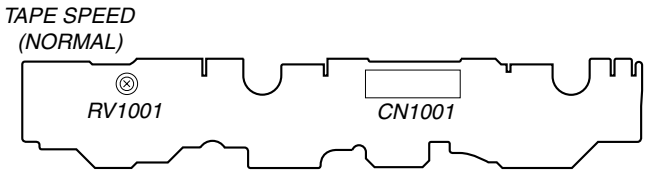
[MAIN BOARD] (Component Side)



[CASSETTE BOARD] (Component Side)



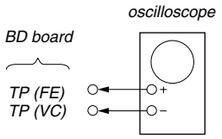
[LEAF SW BOARD] (Component Side)



CD SECTION

Note :

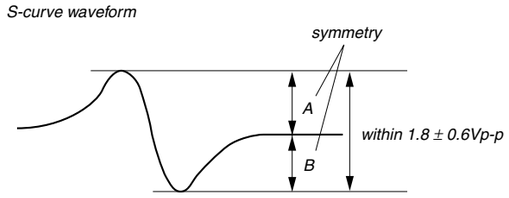
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10 MW impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.



S Curve Check

Procedure :

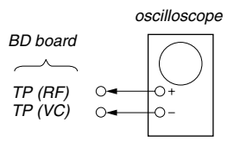
1. Connect the oscilloscope to TP (FE) of the BD board.
2. Press the I/⏻ button to turn ON the power .
3. Open the front cover, and press the CD PLUS ONE button.
4. Set the disc (YEDS-18) into the "PLUS ONE" slit.
5. Close the front cover, and chuck the disc.
6. The first track will be played back automatically.
7. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 1.8 ± 0.6 Vp-p.



8. Turn OFF the power.

Note : • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

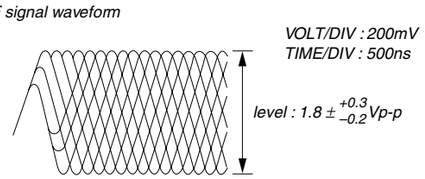
RF Level Check



Procedure :

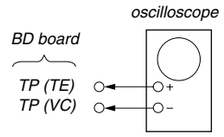
1. Connect the oscilloscope to TP (RF) of the BD board.
2. Press the I/⏻ button to turn ON the power.
3. Open the front cover, and press the CD PLUS ONE button.
4. Set the disc (YEDS-18) into the "PLUS ONE" slit.
5. Close the front cover, and chuck the disc.
6. Playback the fifth track of the disc.
7. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.
8. Turn OFF the power.

Note : A clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

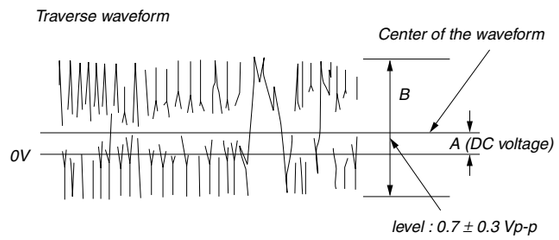


E-F Balance (Traverse) Check

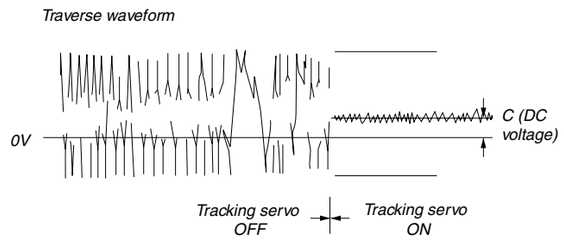
The procedure for this checking method differs for when a general remote control unit is used and not used.



1. Solder lead wires to TP (DVDD) and TP (TOFF) on the BD board severally.
2. Connect the oscilloscope to TP (TE) of the BD board.
3. Press the I/⏻ button to turn ON the power.
4. Open the front cover, and press the CD PLUS ONE button.
5. Set the disc (YEDS-18) into the "PLUS ONE" slit.
6. Close the front cover, and chuck the disc.
7. Playback the fifth track of the disc.
8. Short-circuit the lead wire connected at step 1. (The tracking servo is turned OFF)
9. Check the level B of the oscilliscope's waveform and the A (DC voltage) of the center of the Traverse waveform.
   Confirm the following :
   A/B × 100 = less than ± 10%



10. Disconnect the lead wire short-circuited at step 8. (The tracking servo is turned ON.) Confirm the C (DC voltage) is almost equal to the A (DC voltage) is step 8.

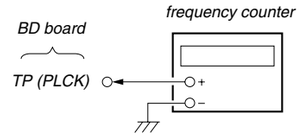


11. Turn OFF the power, and remove the lead wire connected at step 1.

RF PLL Free-run Frequency Check

Procedure :

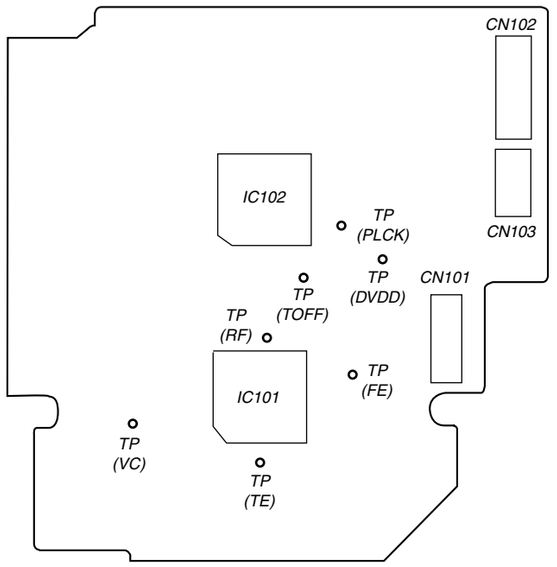
1. Connect the frequency counter to TP (PLCK) of the BD board.



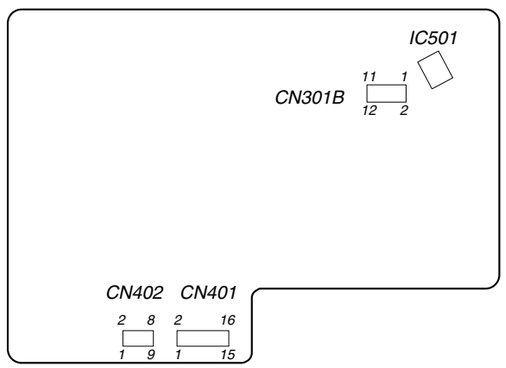
2. Press the I/⏻ button to turn ON the power.
3. Open the front cover, and press the CD PLUS ONE button.
4. Set the disc (YEDS-18) into the "PLUS ONE" slit.
5. Close the front cover, and chuck the disc.
6. Playback the fifth track of the disc.
7. Confirm that reading on frequency counter is 4.3218 MHz ± 30 kHz.

Adjustment Location :

[BD BOARD] — CONDUCTOR SIDE —



[MAIN BOARD] — COMPONENT SIDE —



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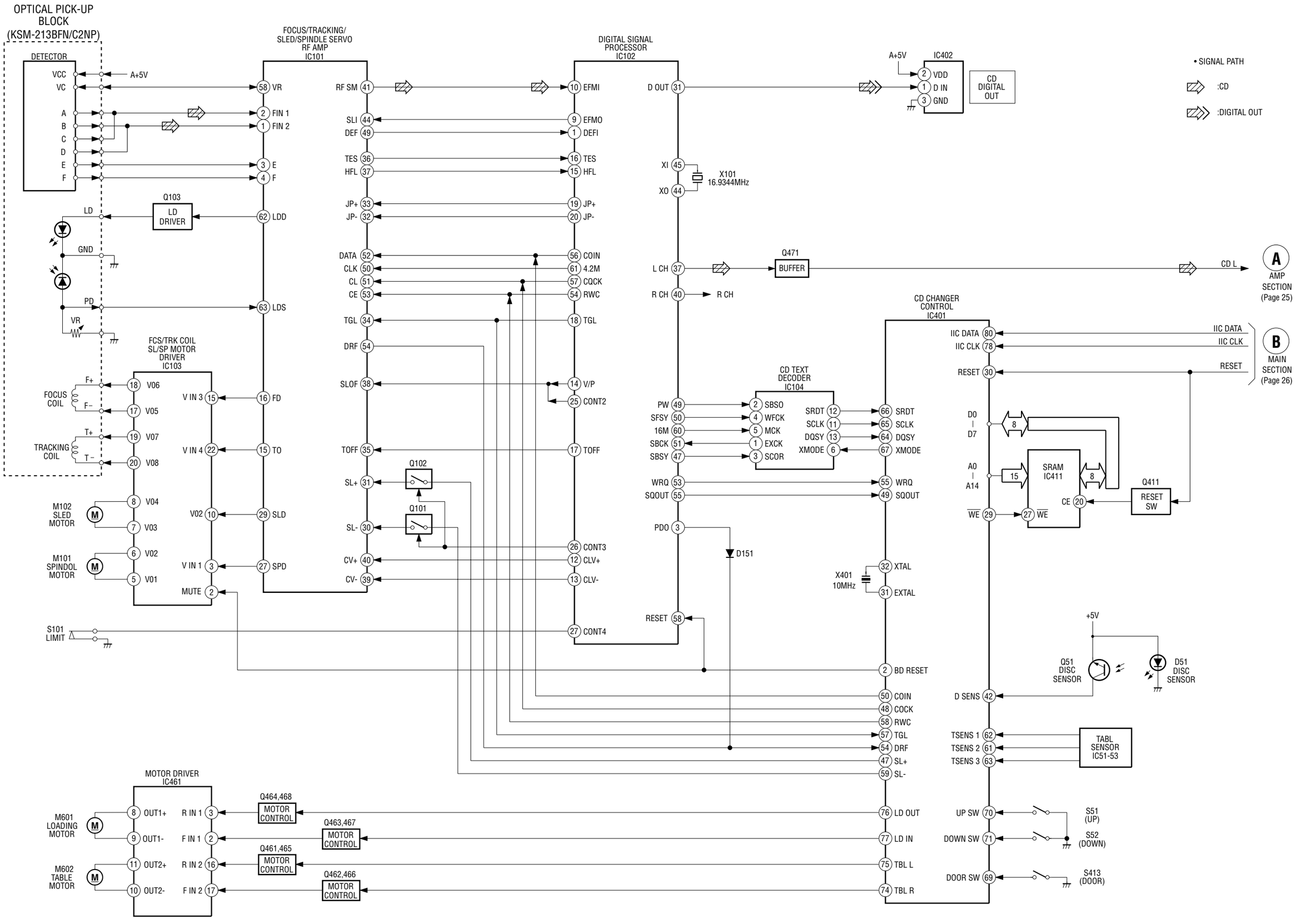
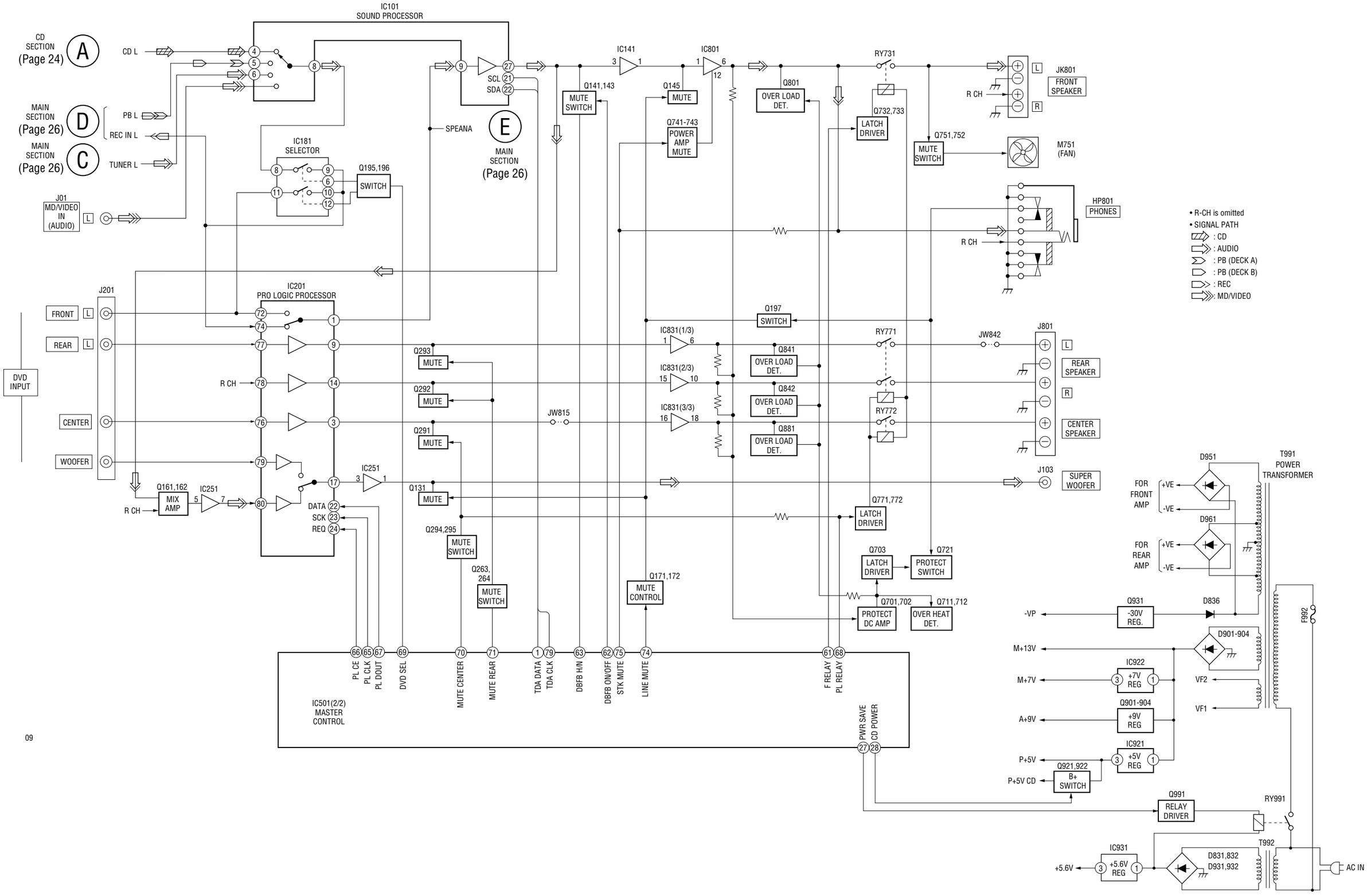
SECTION 6
DIAGRAMS

6-1. BLOCK DIAGRAM – CD SECTION –



– MAIN SECTION –



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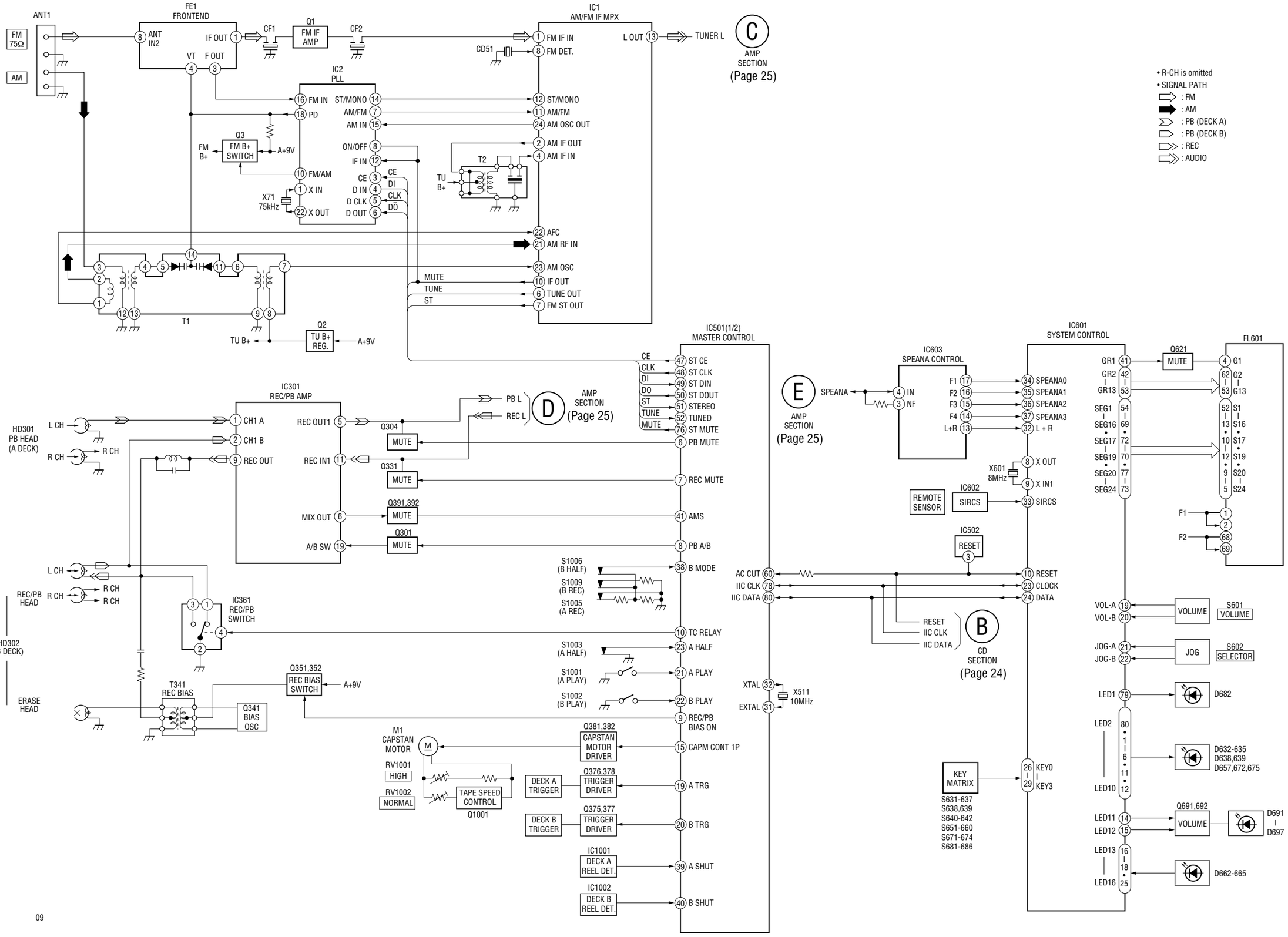
– AUDIO SECTION –



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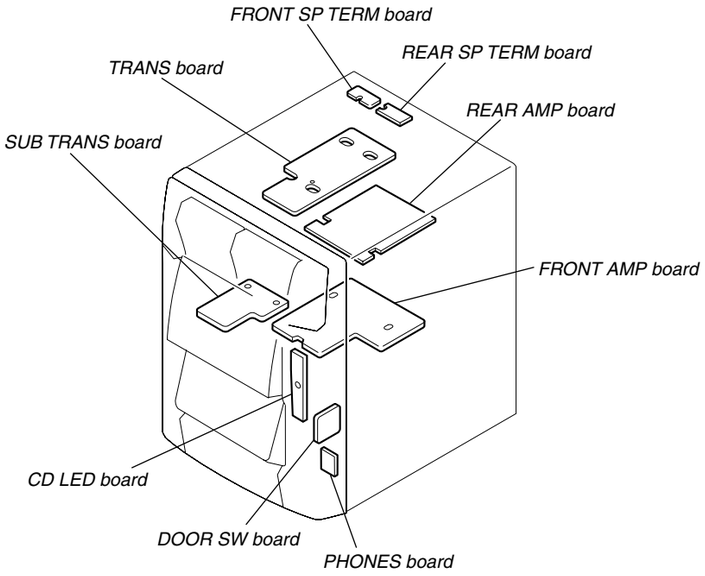
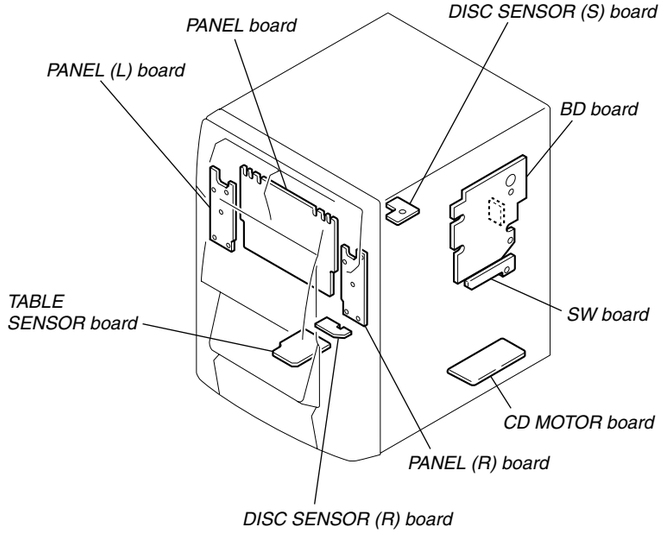
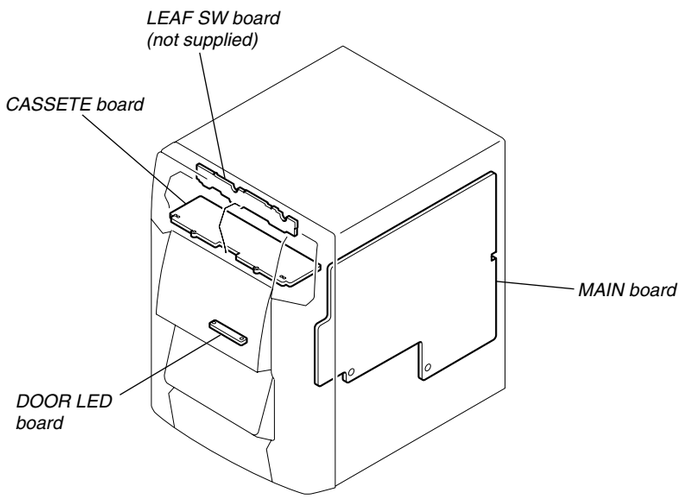
6-2. CIRCUIT BOARDS LOCATION







THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this necessary note is printed in each block.)

For schematic diagrams.
Note:

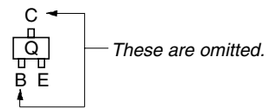
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

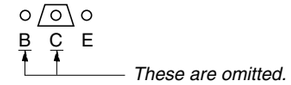
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- B− : B− Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
- Circled numbers refer to waveforms.
- Signal path.
  - : FM
  - : VIDEO/MD
  - : PB (DECK A)
  - : PB (DECK B)
  - : REC (DECK B)
  - : CD
  - : CD DIGITAL

For printed wiring boards.
Note:

- ○——— : parts extracted from the component side.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.

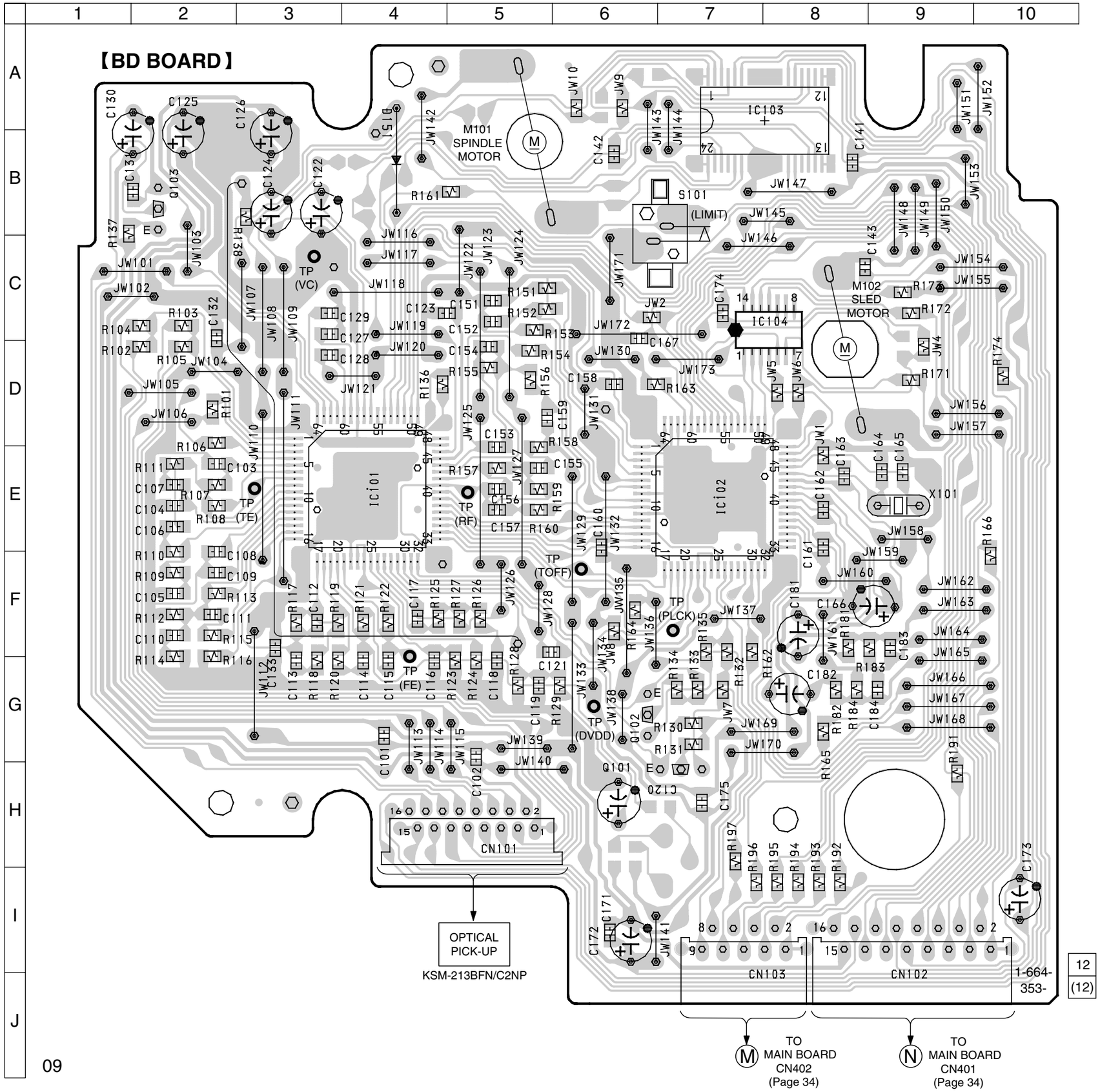




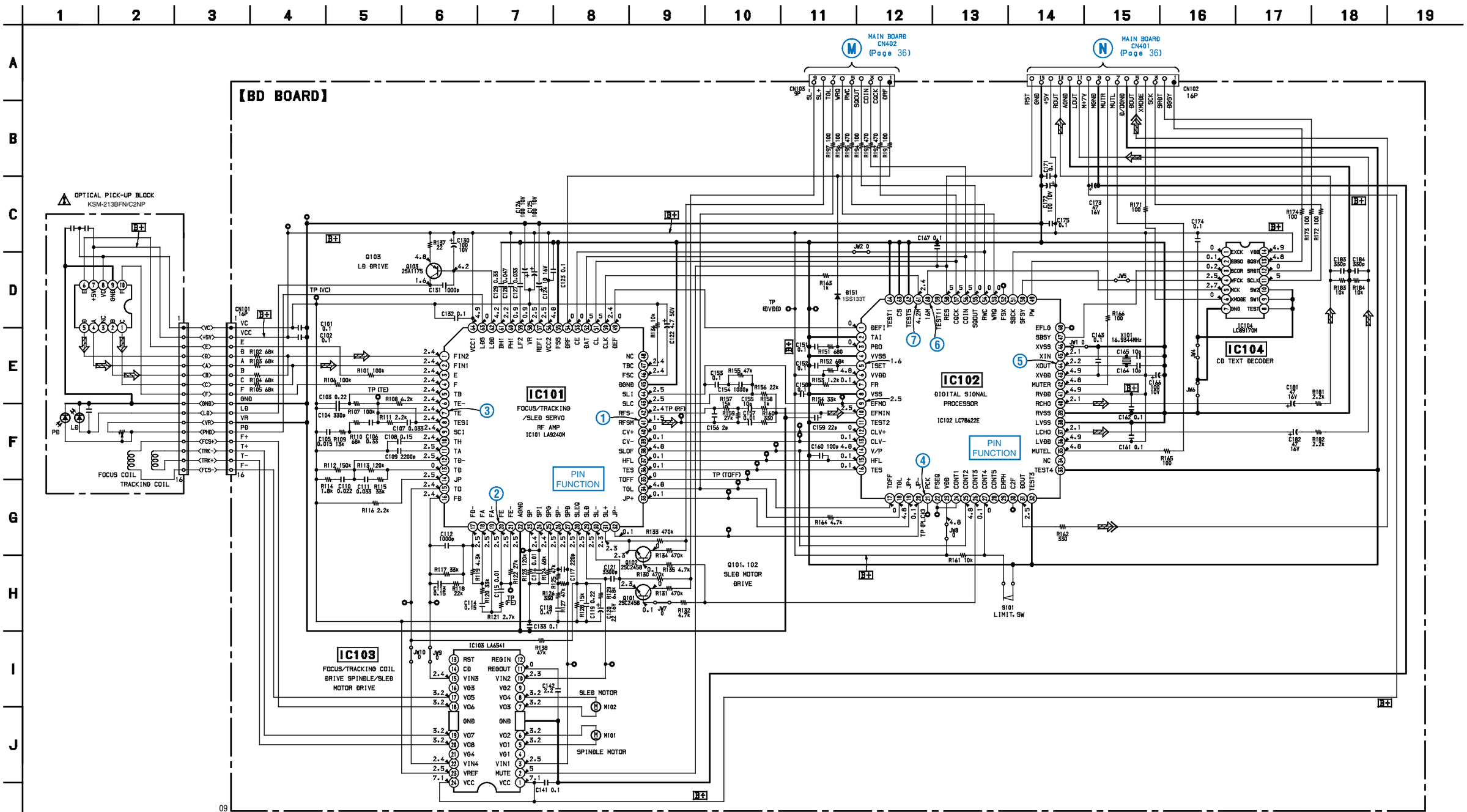
6-3. PRINTED WIRING BOARD – BD SECTION – • See page 27 for Circuit Boards Location.

• **Semiconductor Location**

Ref. No.	Location
D151	B-4
IC101	E-4
IC102	E-7
IC103	B-8
IC104	C-8
Q101	H-6
Q102	G-6
Q103	B-2



6-4. SCHEMATIC DIAGRAM – BD SECTION – • See page 48 for Waveforms. • See page 48, 50 for IC Pin Functions.



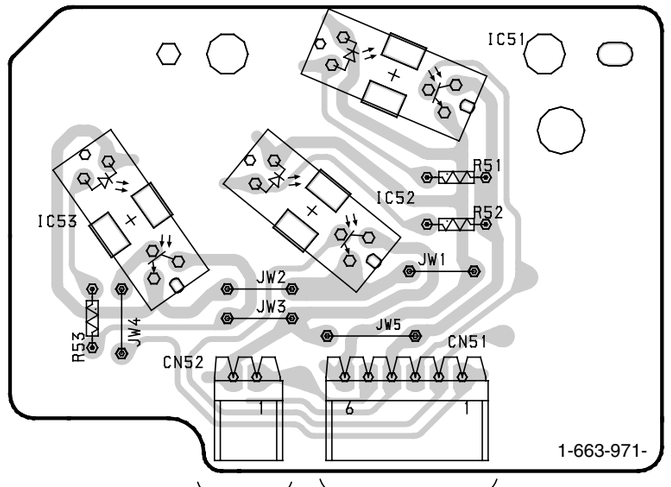
NOTE

- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark:CD

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

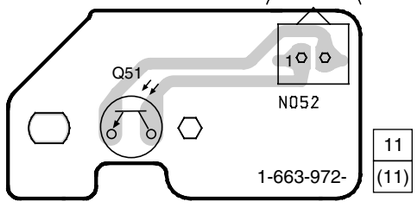
6-5. PRINTED WIRING BOARD – CD MOTOR SECTION – • See page 27 for Circuit Boards Location.

【TABLE SENSOR BOARD】

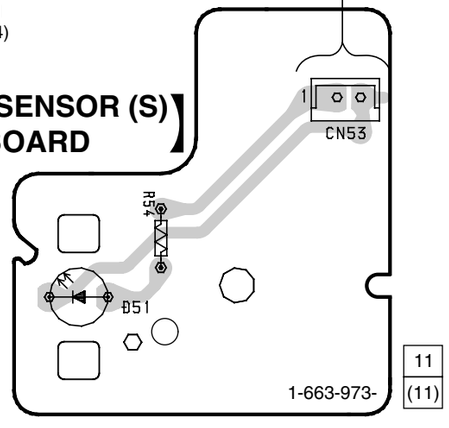


TO MAIN BOARD CN451 (Page 34) J

【DISC SENSOR (R) BOARD】

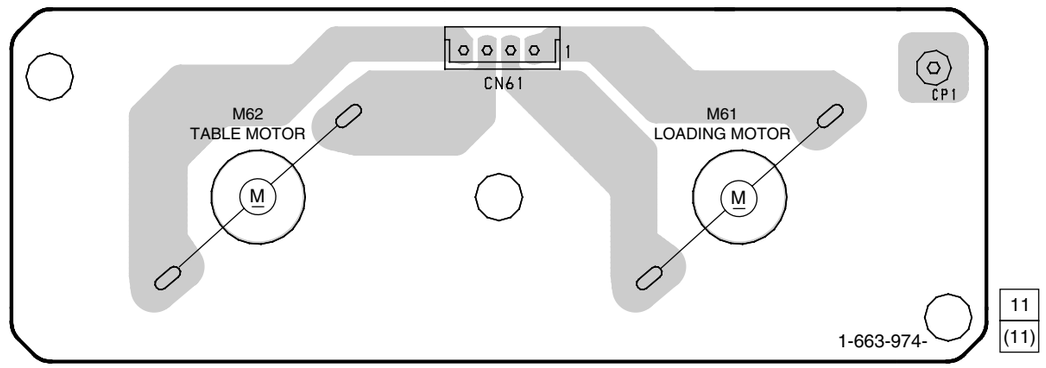


【DISC SENSOR (S) BOARD】



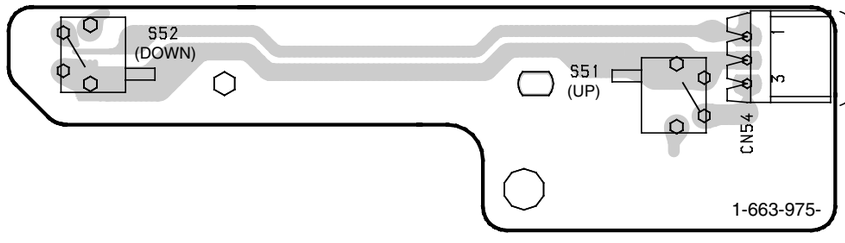
TO MAIN BOARD CN453 (Page 34) I

【CD MOTOR BOARD】



TO MAIN BOARD CN461 (Page 34) L

【DOOR SW BOARD】



TO MAIN BOARD CN454 (Page 34) K

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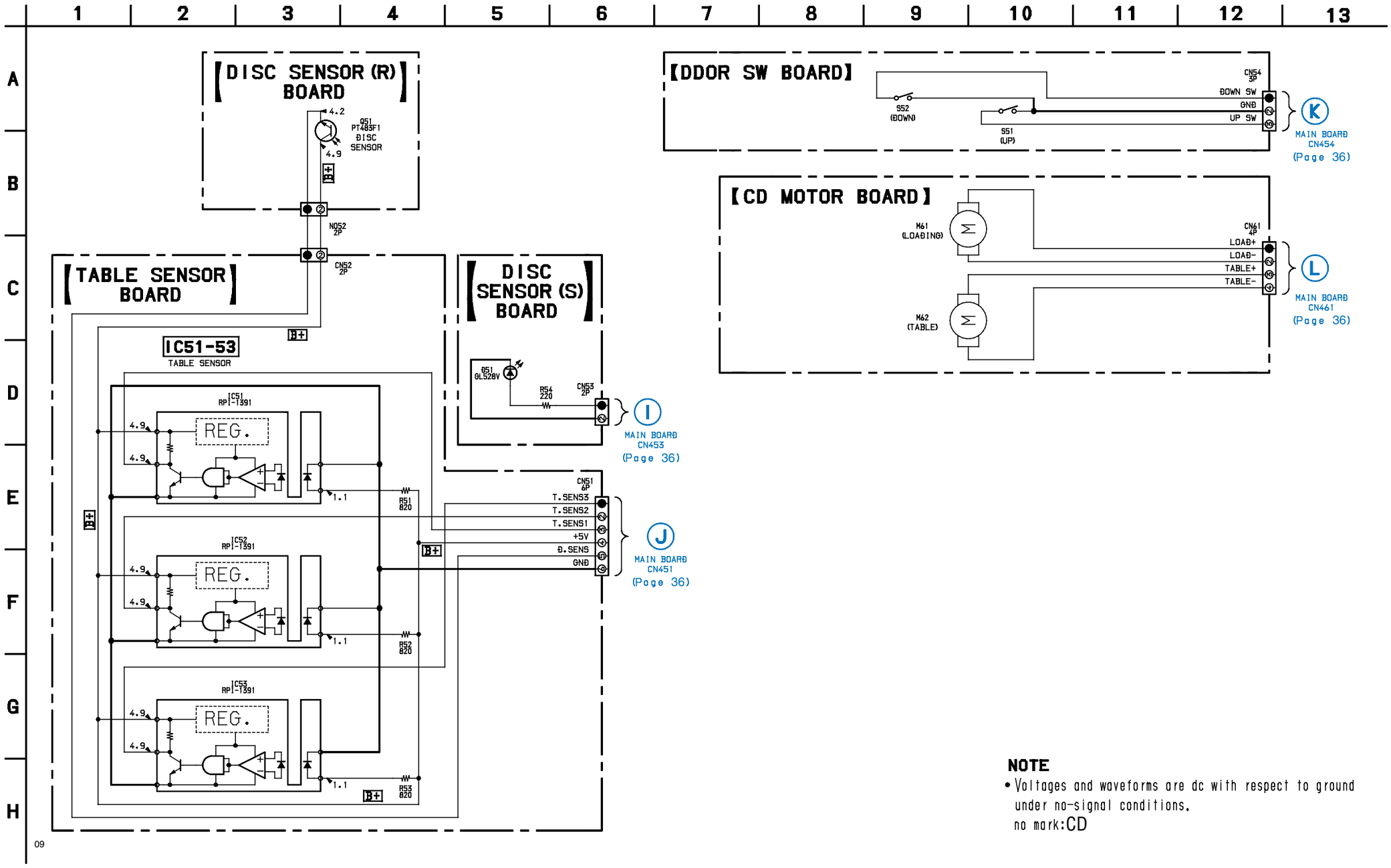
6-6. SCHEMATIC DIAGRAM – CD MOTOR SECTION –



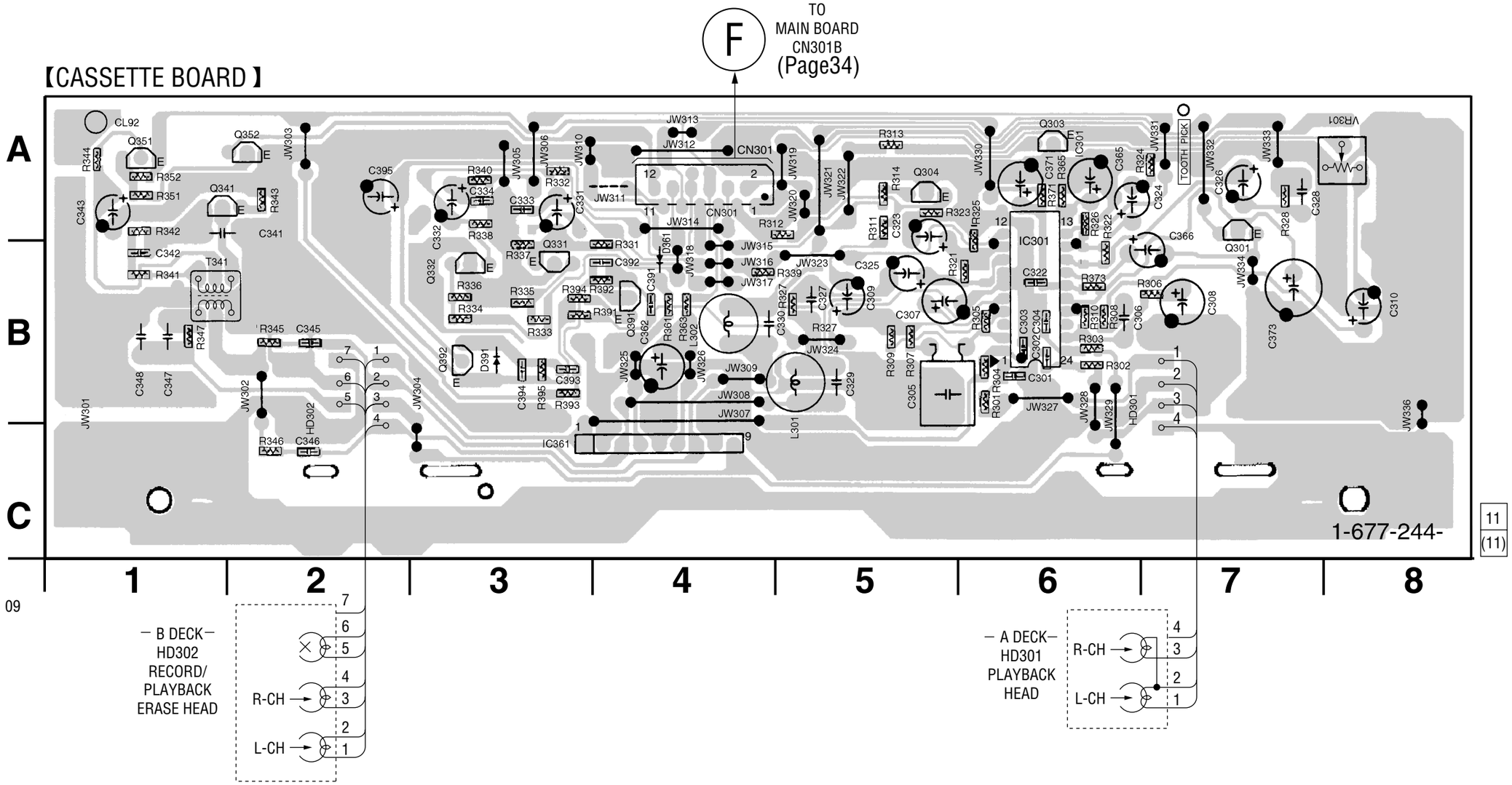
NOTE

- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark:CD

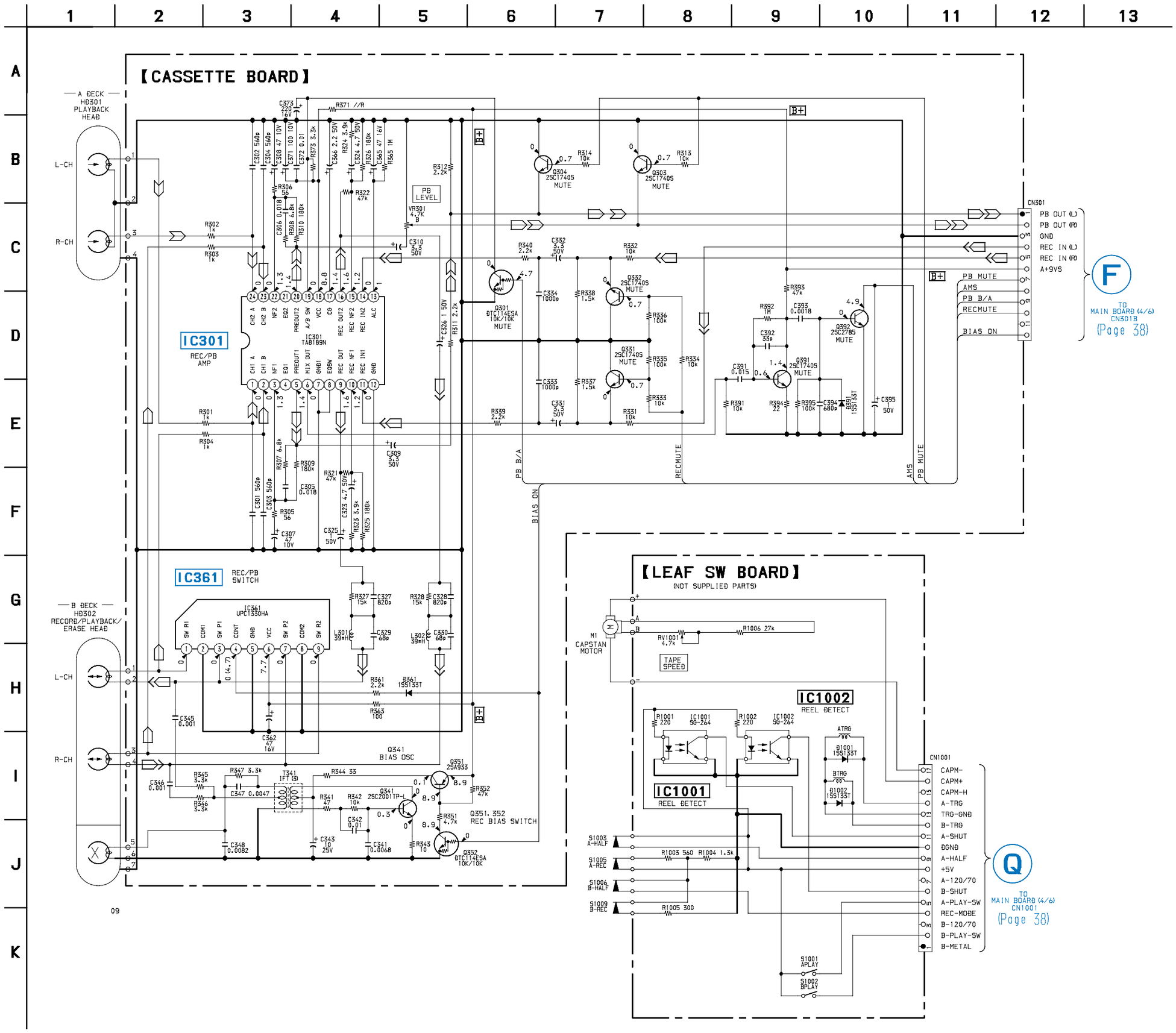
6-7. PRINTED WIRING BOARD – AUDIO SECTION – **• See page 27 for Circuit Boards Location.**

• Semiconductor Location

Ref. No.	Location
D361	B-4
D391	B-3
IC301	B-6
IC361	C-3
Q301	A-7
Q303	A-6
Q304	A-5
Q331	B-3
Q332	B-3
Q341	A-1
Q351	A-1
Q352	A-2
Q391	B-4
Q392	B-3



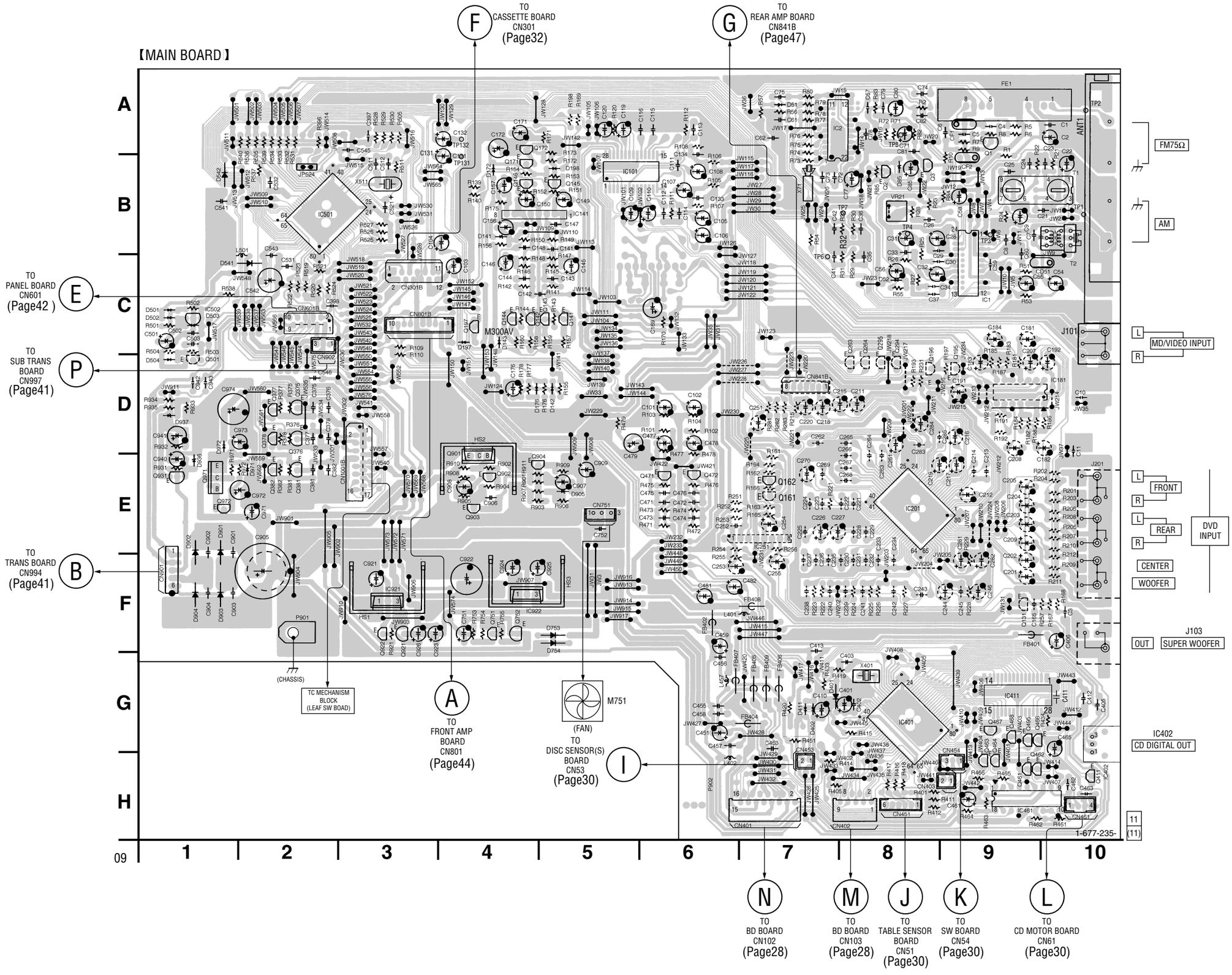
6-8. SCHEMATIC DIAGRAM – AUDIO SECTION – • See page 56 for IC Block Diagrams.



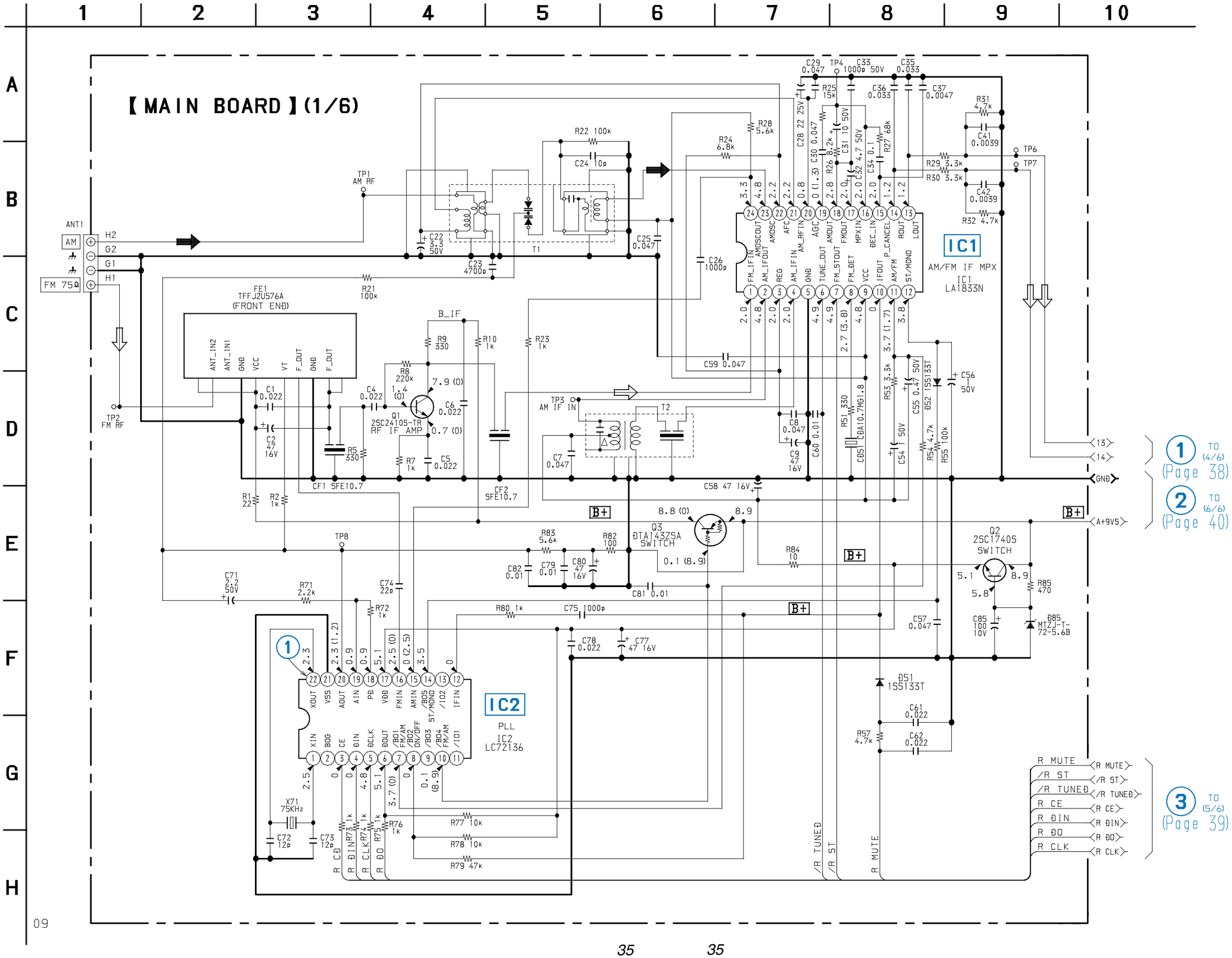
6-9. PRINTED WIRING BOARD – MAIN SECTION – • See page 27 for Circuit Boards Location.

• **Semiconductor Location**

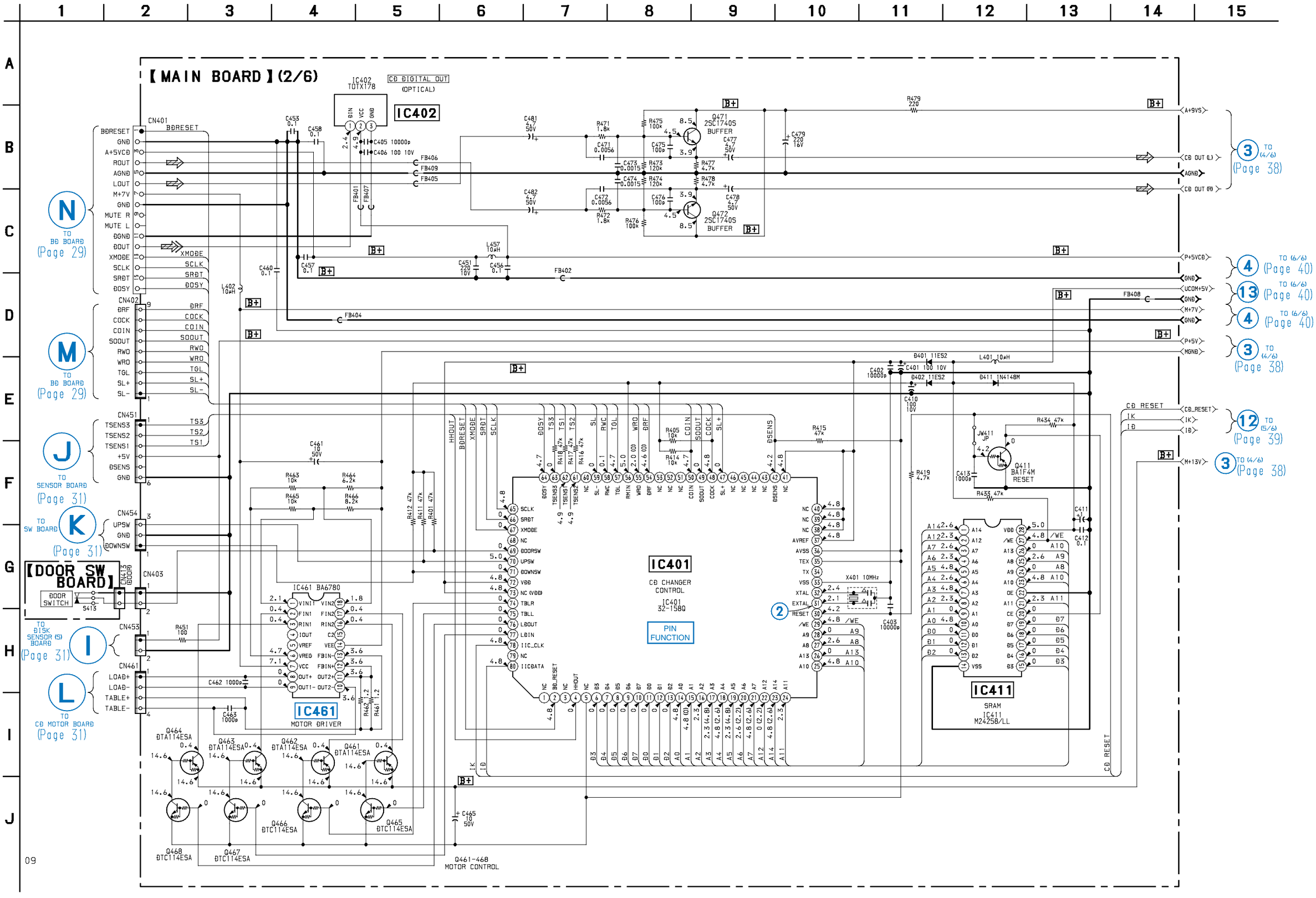
Ref. No.	Location	Ref. No.	Location
D51	A-7	Q3	B-8
D52	C-8	Q131	F-9
D85	B-8	Q141	C-5
D141	B-4	Q142	C-5
D142	D-5	Q143	C-5
D143	C-4	Q144	C-4
D172	B-4	Q145	B-5
D176	D-5	Q146	B-4
D197	C-4	Q161	E-7
D198	B-5	Q162	E-7
D401	G-8	Q171	B-4
D402	G-7	Q172	A-4
D411	G-7	Q195	D-9
D501	C-1	Q196	D-8
D502	C-1	Q197	C-4
D503	C-1	Q263	C-8
D541	C-1	Q264	C-8
D542	B-1	Q294	C-8
D753	F-5	Q295	C-8
D754	F-5	Q375	D-2
D901	E-1	Q376	D-2
D902	E-1	Q377	D-2
D903	F-1	Q378	D-2
D904	F-1	Q381	E-2
D905	E-5	Q382	E-2
D936	E-1	Q411	H-10
D937	D-1	Q461	H-9
D971	E-2	Q462	H-9
D972	D-1	Q463	G-9
		Q464	G-9
IC1	C-9	Q465	G-9
IC2	A-7	Q466	G-9
IC101	B-5	Q467	G-9
IC141	B-5	Q468	G-9
IC181	D-9	Q471	E-6
IC201	E-8	Q472	E-6
IC251	E-7	Q751	F-4
IC401	G-8	Q752	F-4
IC402	H-10	Q901	E-4
IC411	G-9	Q902	E-4
IC461	H-9	Q903	E-4
IC501	B-2	Q904	E-4
IC502	C-1	Q921	F-3
IC921	F-3	Q922	F-3
IC922	F-4	Q931	E-1
		Q971	E-1
Q1	A-9	Q972	E-1
Q2	B-8		



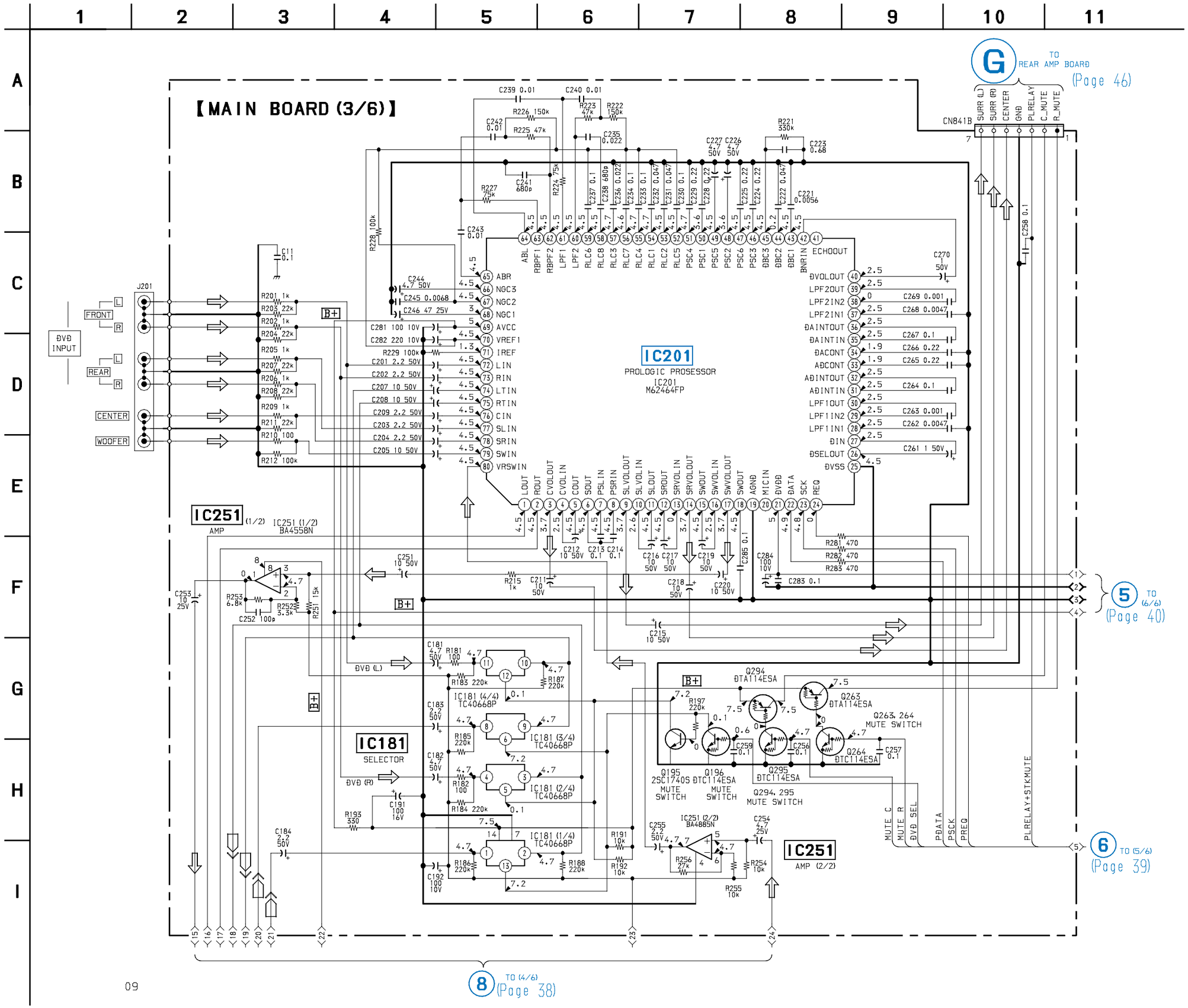
6-10. SCHEMATIC DIAGRAM – MAIN (1/6) SECTION – • See page 48 for Waveforms. • See page 58 for IC Block Diagrams.



6-11. SCHEMATIC DIAGRAM – MAIN (2/6) SECTION – • See page 32 for Printed Wiring Board. • See page 48 for Waveforms. • See page 52 for IC Pin Functions. • See page 56 for IC Block Diagrams.



6-12. SCHEMATIC DIAGRAM – MAIN (3/6) SECTION – • See page 32 for Printed Wiring Board. • See page 57 for IC Block Diagrams.



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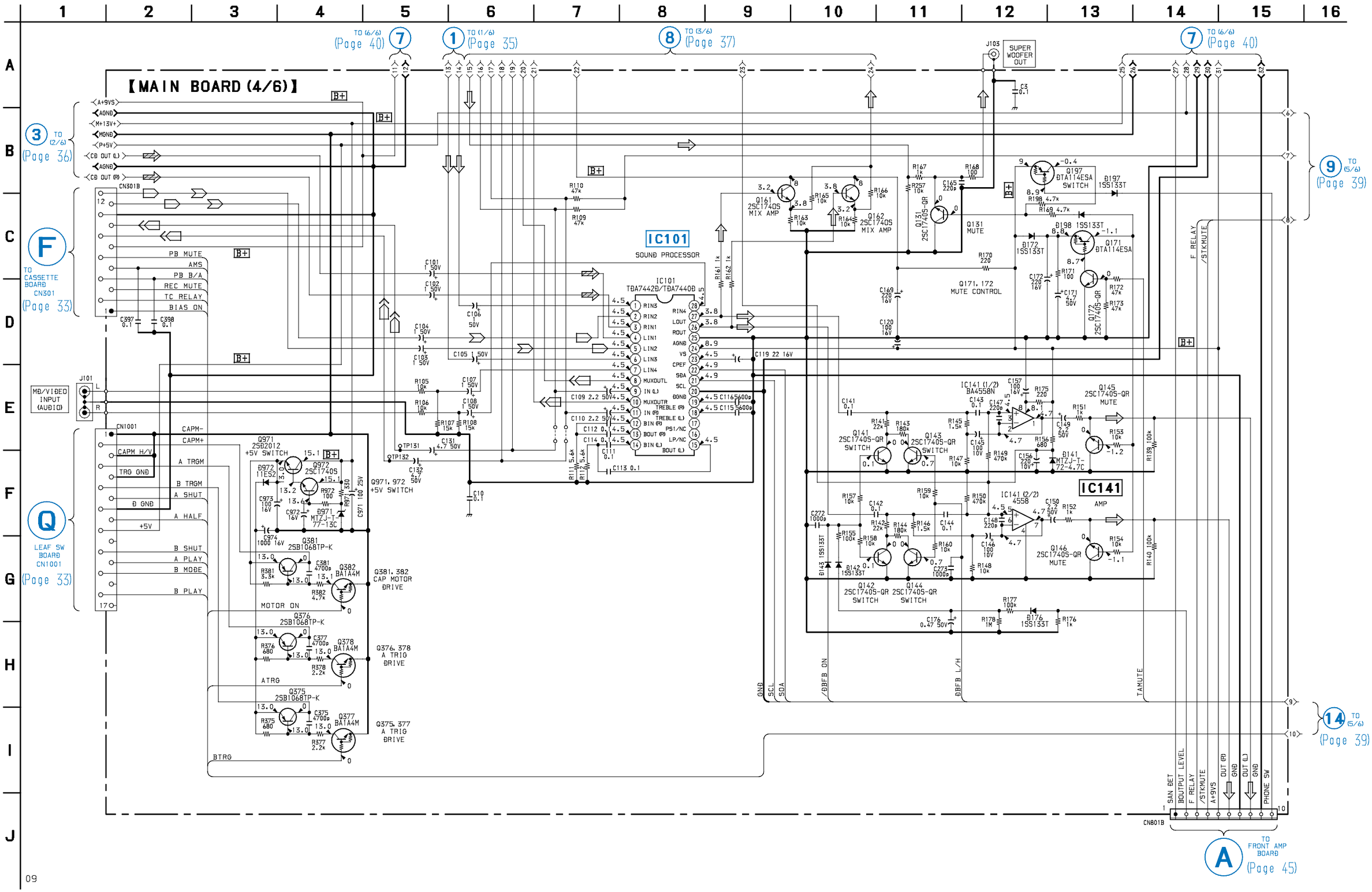
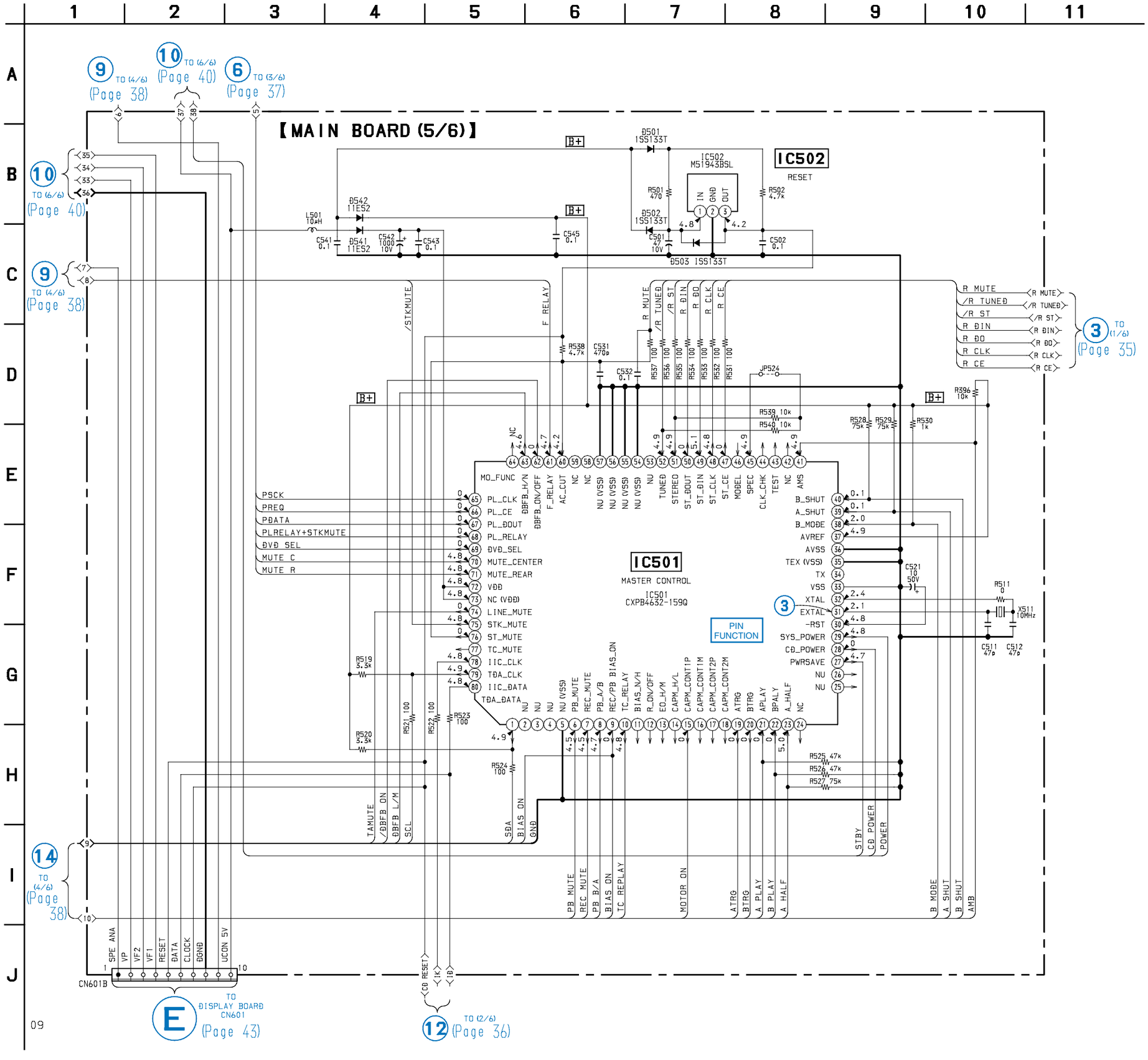
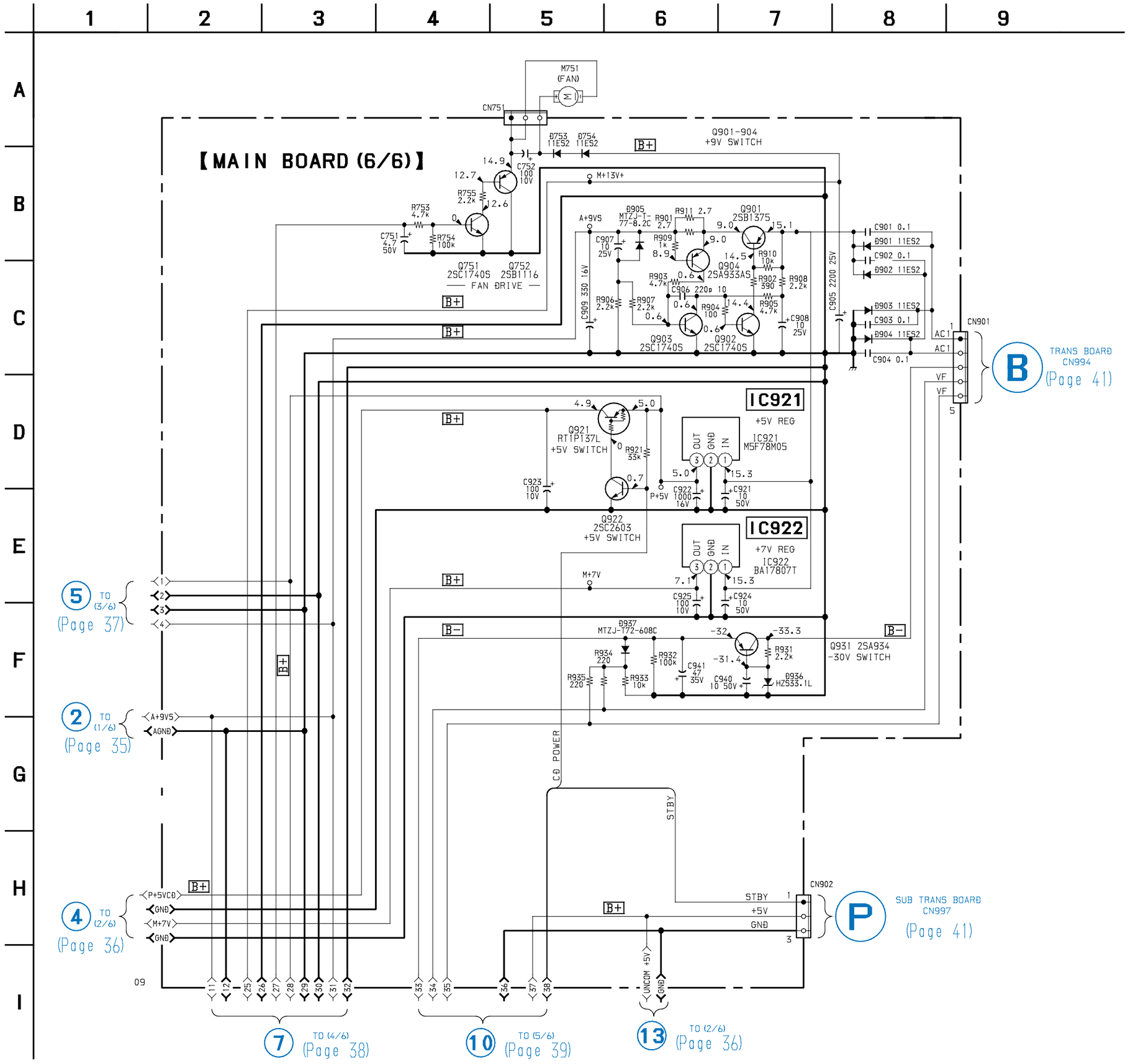
6-13. SCHEMATIC DIAGRAM – MAIN (4/6) SECTION – • See page 32 for Printed Wiring Board. • See page 57 for IC Block Diagrams.



6-14. SCHEMATIC DIAGRAM – MAIN (5/6) SECTION – • See page 32 for Printed Wiring Board. • See page 48 for Waveforms. • See page 53 for IC Pin Functions.

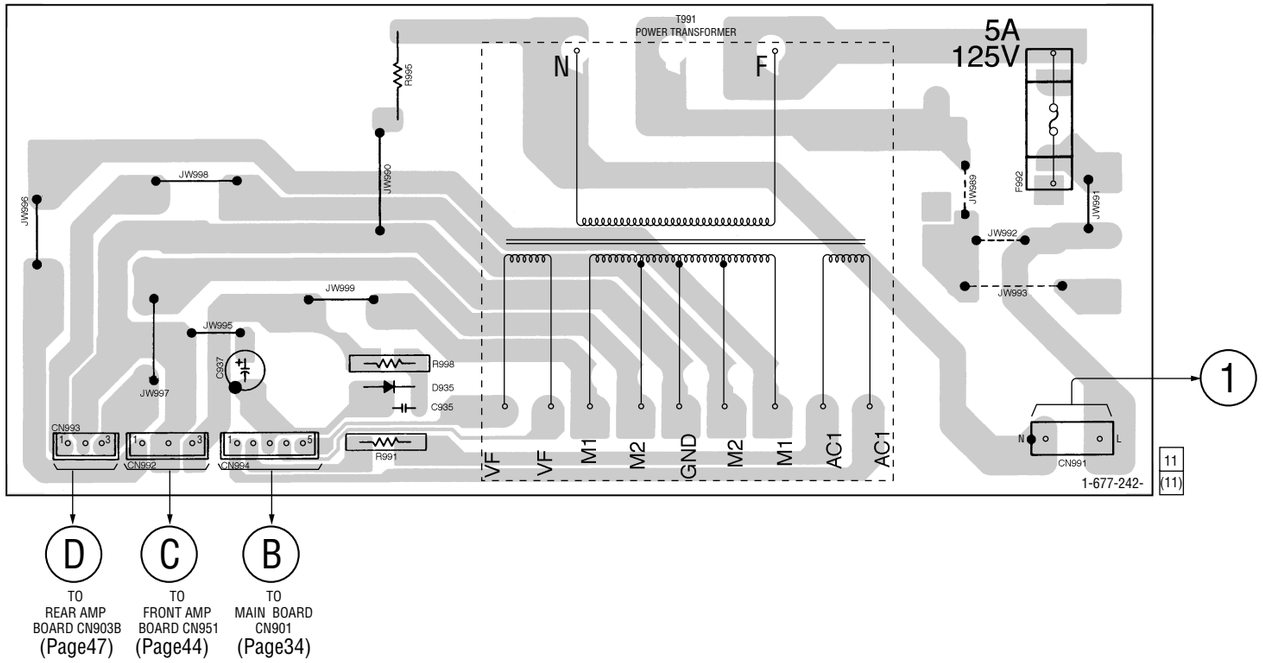


6-15. SCHEMATIC DIAGRAM – MAIN (6/6) SECTION – • See page 32 for Printed Wiring Board.

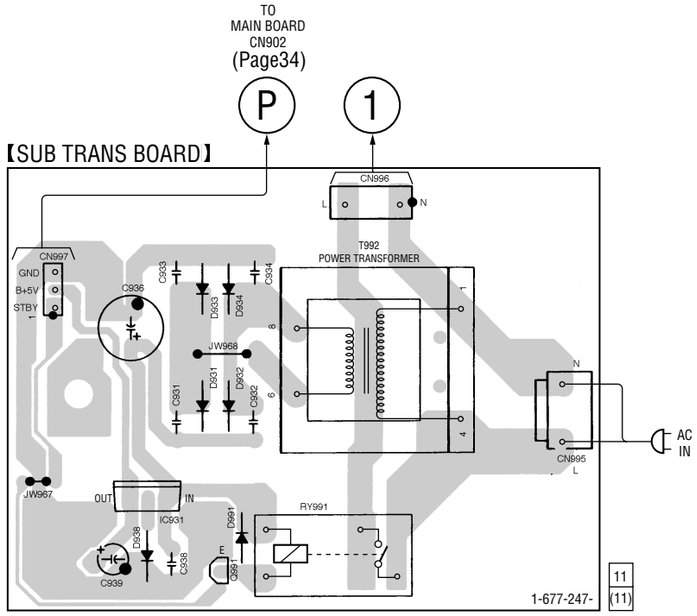


6-16. PRINTED WIRING BOARD – POWER SECTION – • See page 27 for Circuit Boards Location.

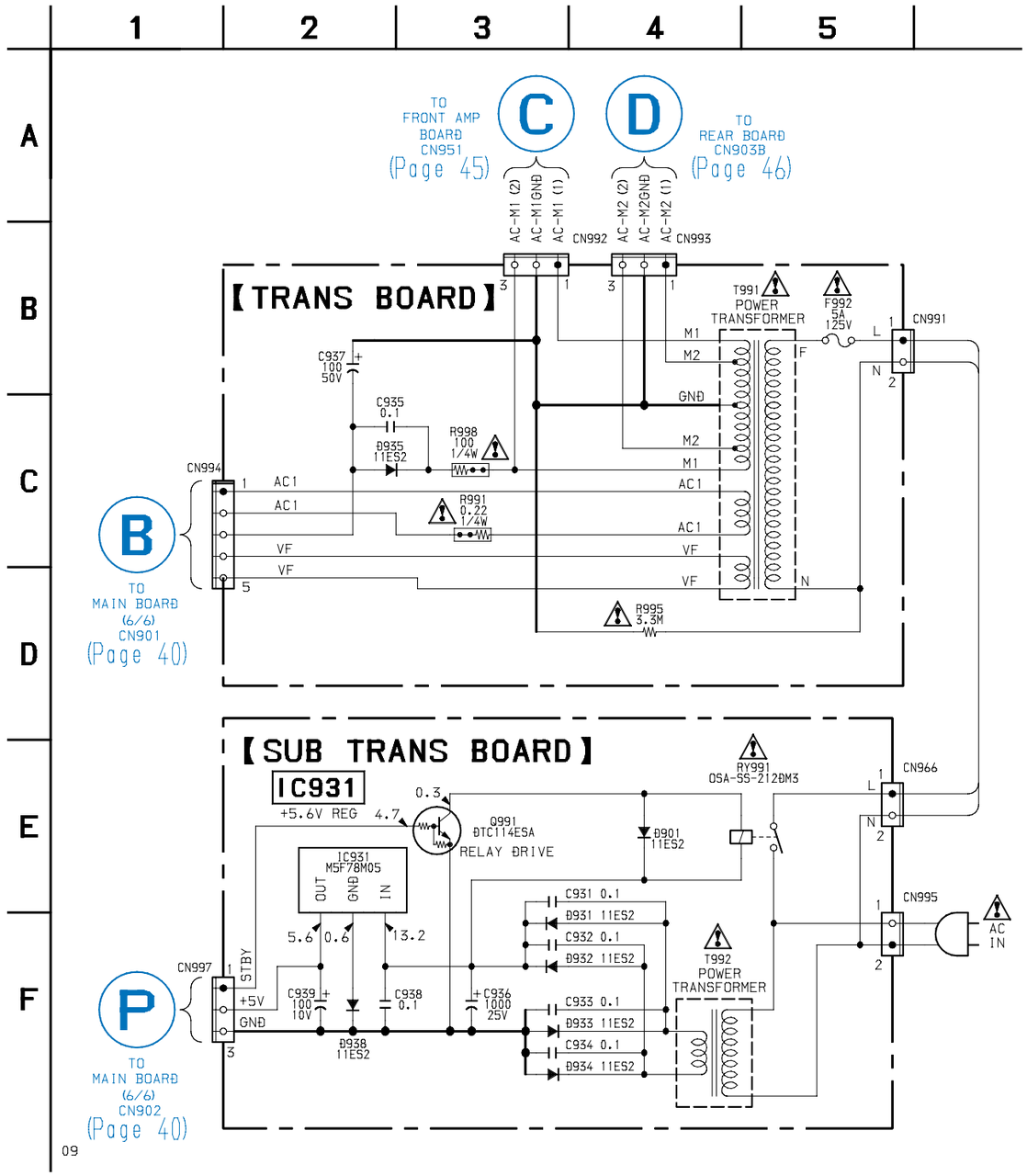
【TRANS BOARD】



【SUB TRANS BOARD】



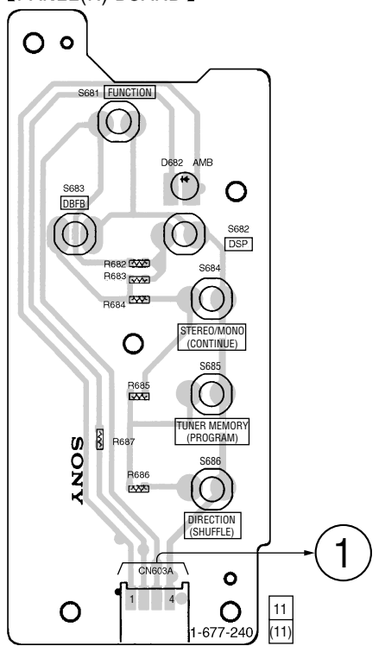
6-17. SCHEMATIC DIAGRAM – POWER SECTION –



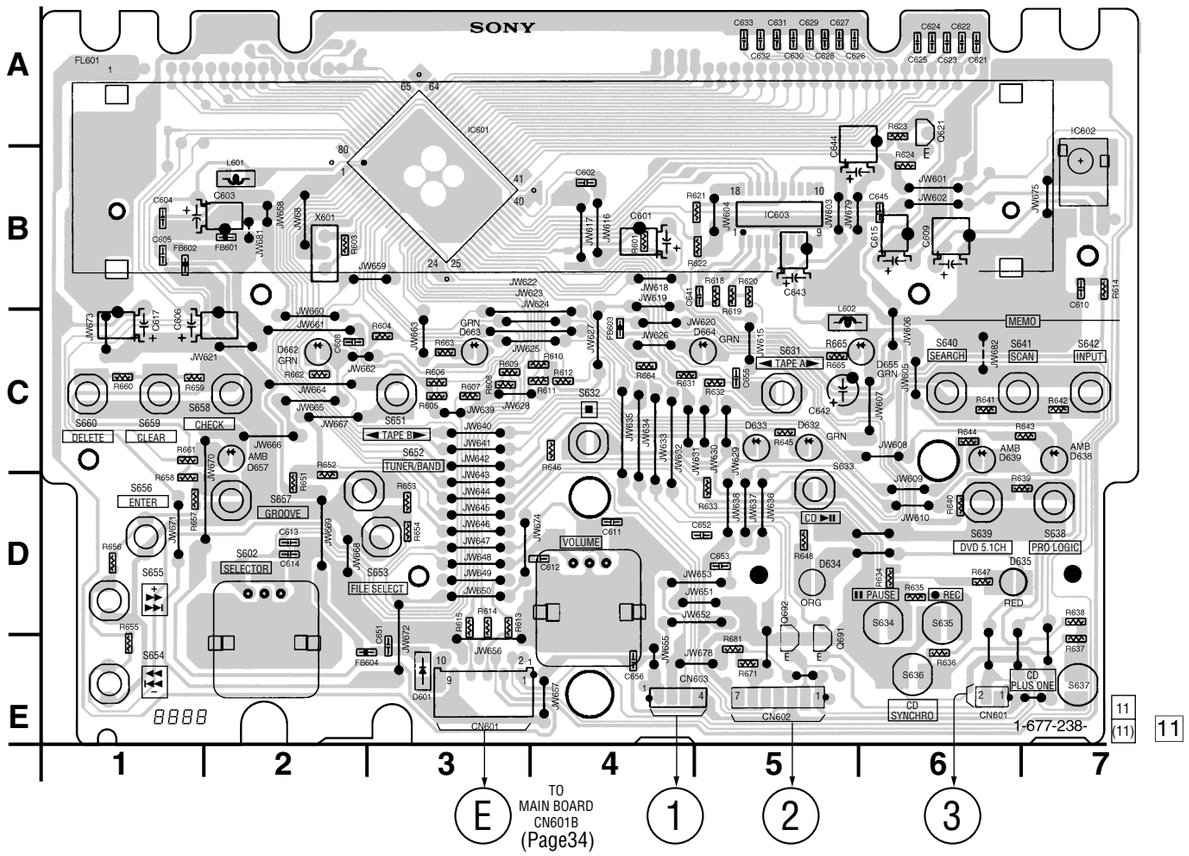
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

6-18. PRINTED WIRING BOARD – PANEL SECTION – • See page 27 for Circuit Boards Location.

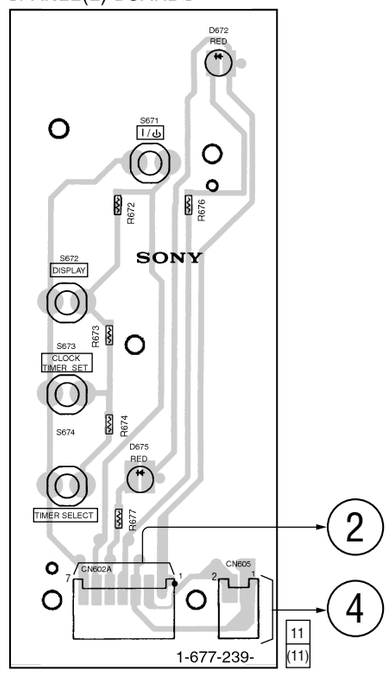
【PANEL(R) BOARD】



【PANEL BOARD】



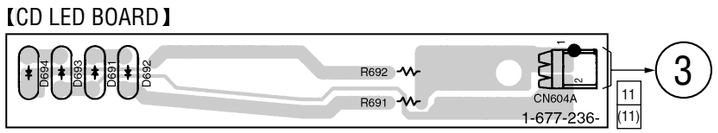
【PANEL(L) BOARD】



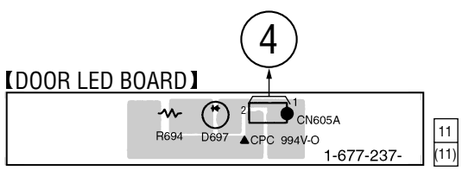
• **Semiconductor Location (PANEL Board)**

Ref. No.	Location
D601	E-3
D632	C-5
D633	C-5
D634	D-5
D635	D-6
D638	C-7
D639	C-6
D657	C-2
D662	C-2
D663	C-3
D664	C-5
D665	C-6
IC601	A-3
IC602	A-7
IC603	B-5
Q621	A-6
Q691	D-2
Q692	D-2

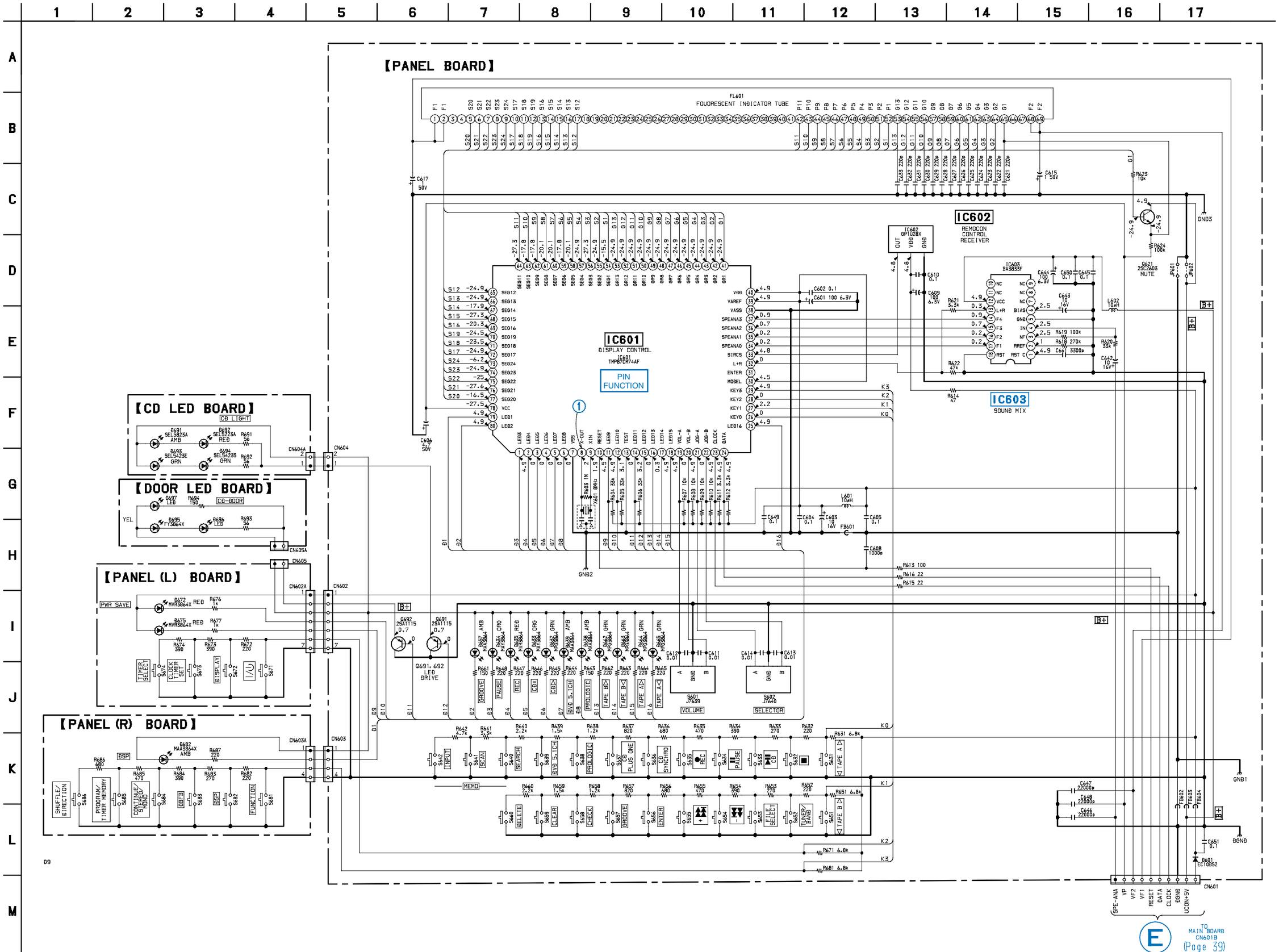
【CD LED BOARD】



【DOOR LED BOARD】



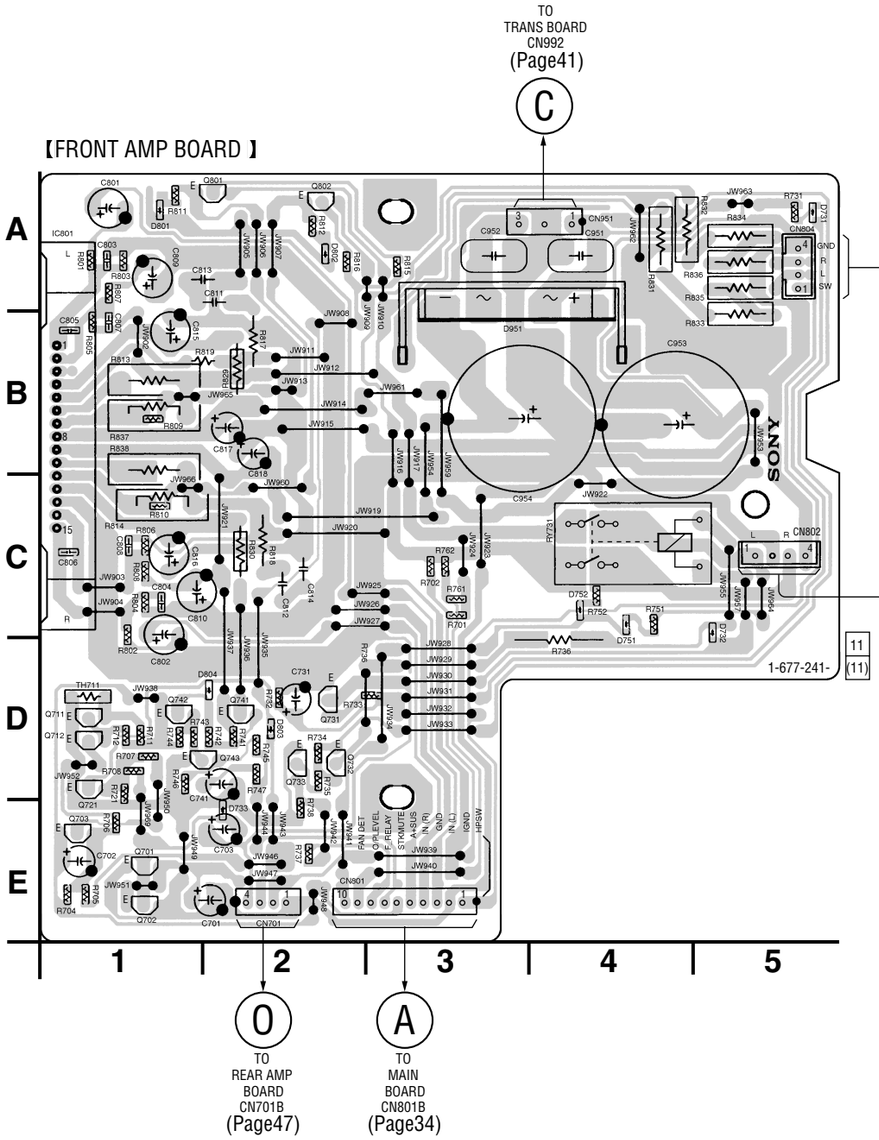
6-19. SCHEMATIC DIAGRAM – PANEL SECTION – • See page 48 for Waveforms. • See page 56 for IC Block Diagrams. • See page 55 for IC Pin Functions.

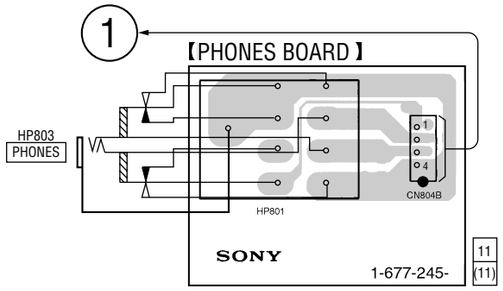


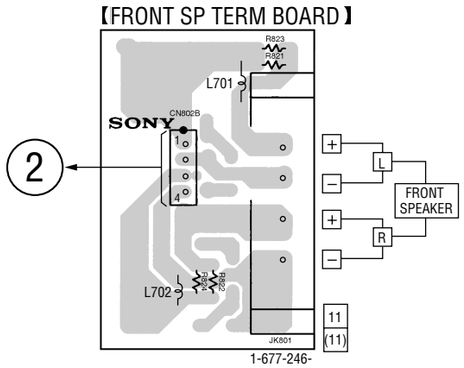
6-20. PRINTED WIRING BOARD – FRONT AMP SECTION – • See page 27 for Circuit Boards Location.

• **Semiconductor Location**

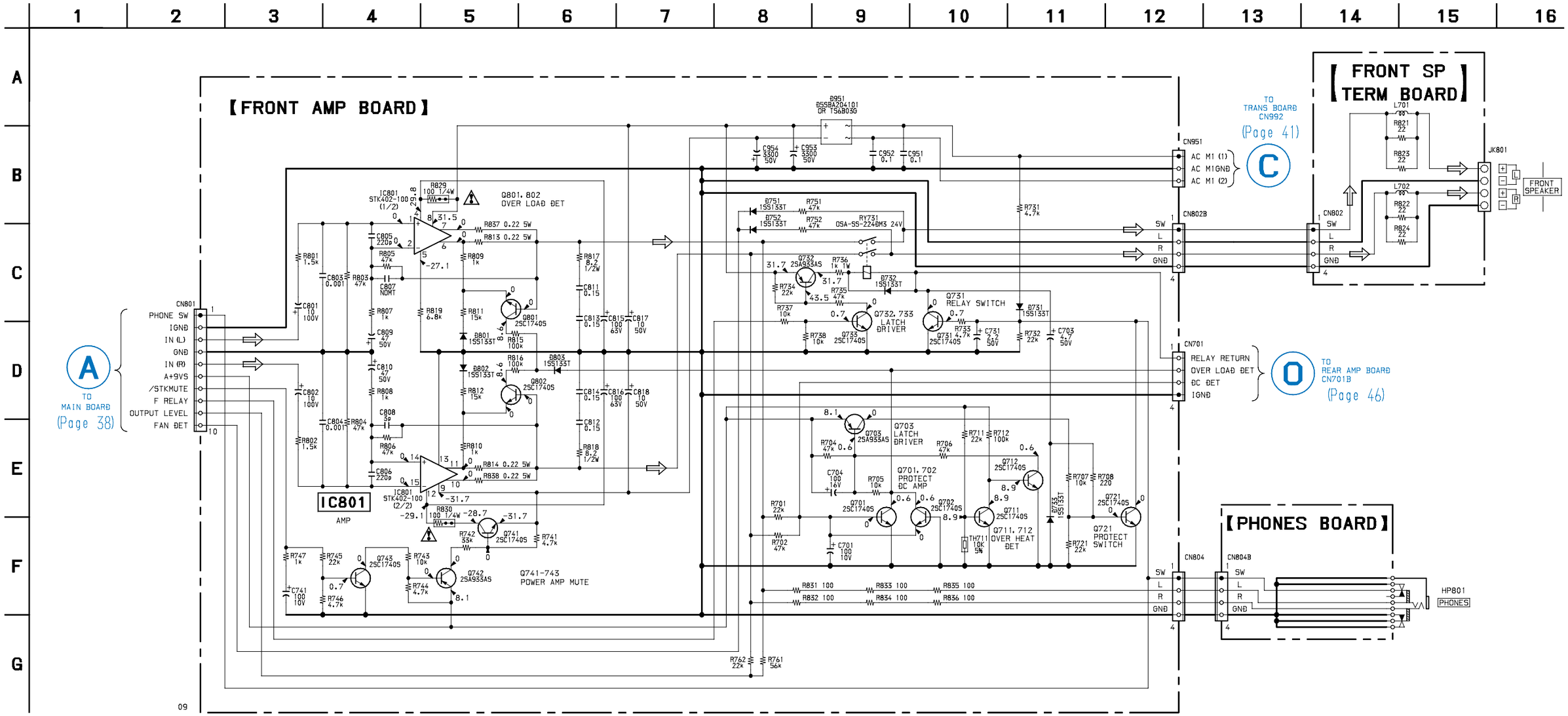
Ref. No.	Location
D731	A-5
D732	C-5
D733	E-2
D751	C-4
D752	C-4
D801	A-1
D802	A-2
D803	D-2
D951	B-3
IC801	A-1
Q701	E-1
Q702	E-1
Q703	E-1
Q711	D-1
Q712	D-1
Q721	D-1
Q731	D-2
Q732	D-2
Q733	D-2
Q741	D-2
Q742	D-1
Q743	D-2
Q801	A-2
Q802	A-2





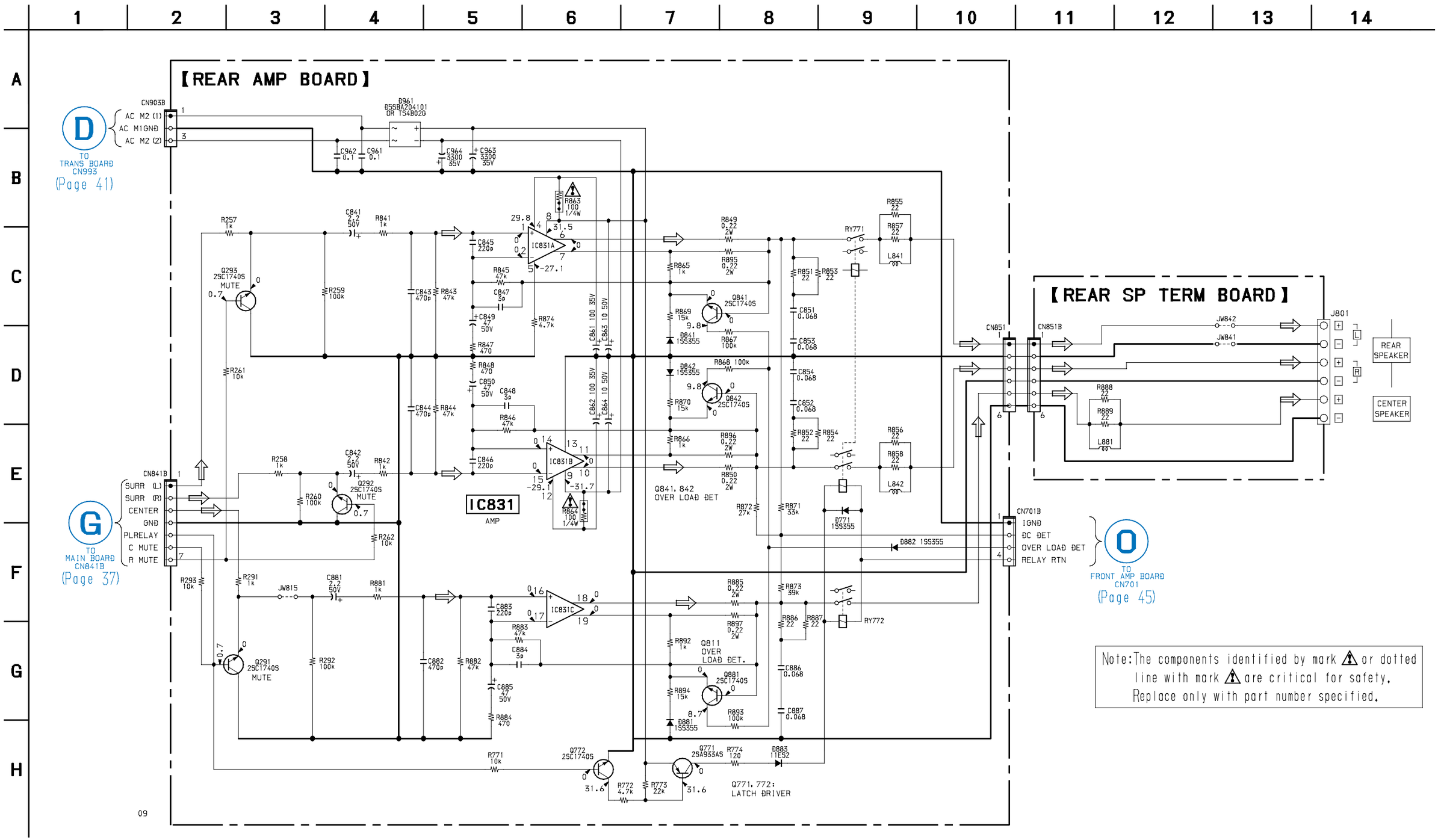


6-21. SCHEMATIC DIAGRAM – FRONT AMP SECTION –



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

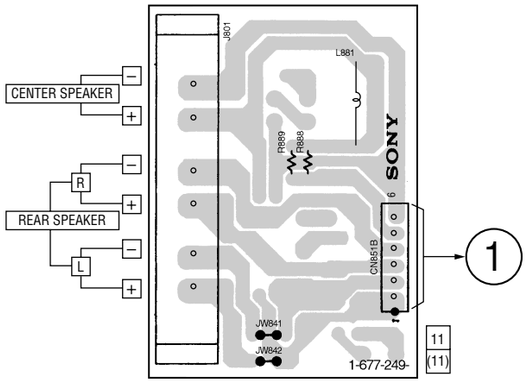
6-22. SCHEMATIC DIAGRAM – REAR AMP SECTION –



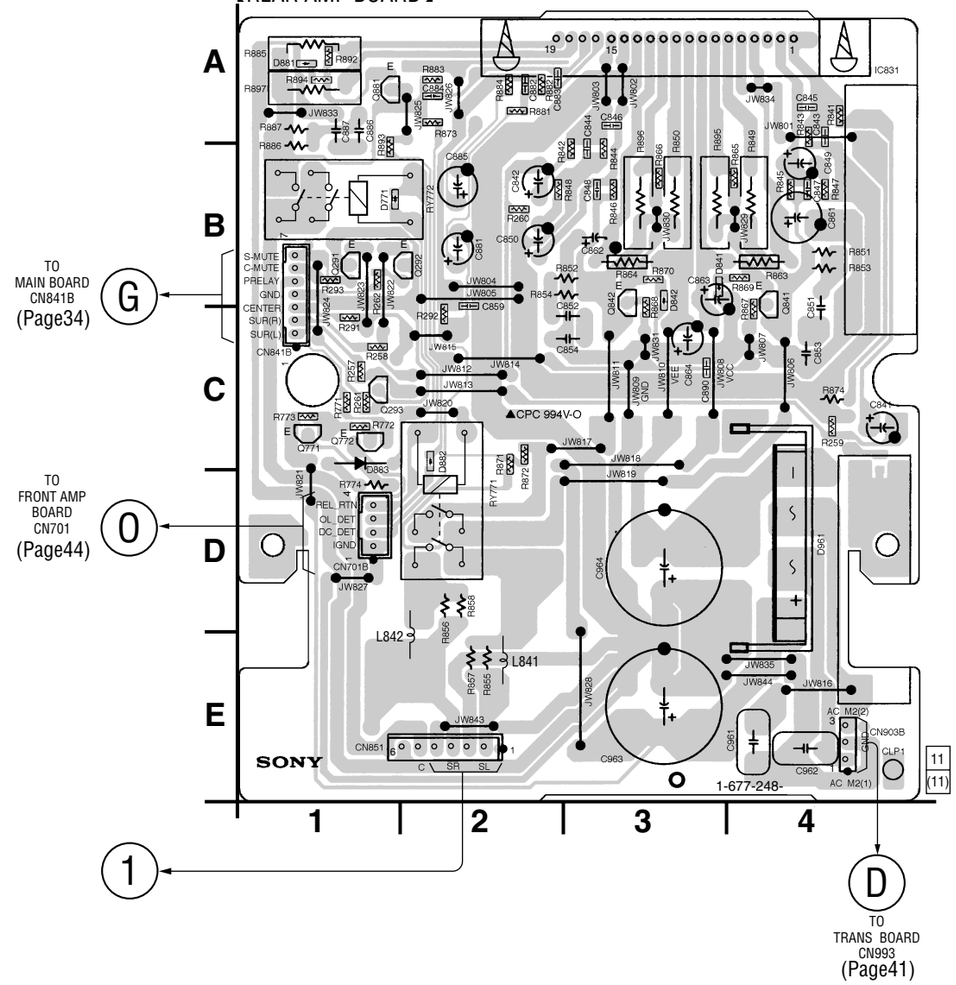
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

6-23. PRINTED WIRING BOARD – REAR AMP SECTION – • See page 27 for Circuit Boards Location.

【REAR SP TERM BOARD】



【REAR AMP BOARD】

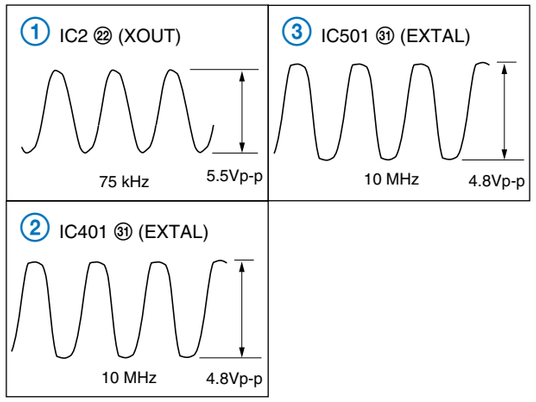


• **Semiconductor Location**

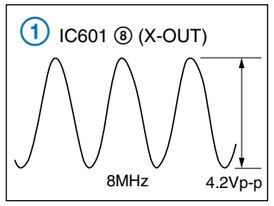
Ref. No.	Location
D771	B-1
D841	B-3
D842	B-3
D881	A-1
D882	C-2
D883	C-1
D961	D-4
IC831	A-4
Q291	B-1
Q292	B-2
Q293	C-1
Q771	C-1
Q772	C-1
Q841	B-4
Q842	B-3
Q881	A-2

6-24. WAVEFORMS

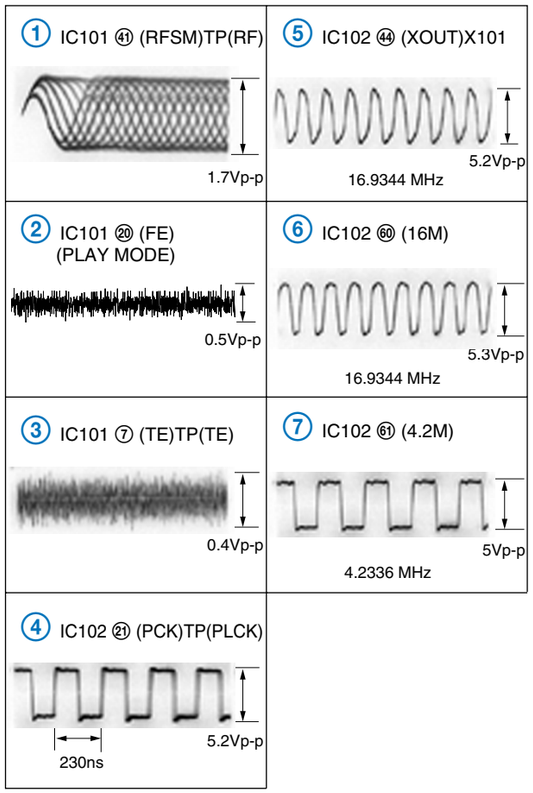
– MAIN Section –



– PANEL Section –



– BD Section –



6-25. IC PIN FUNCTION DESCRIPTION

BD BOARD IC101 LA9240M (FOCUS/TRACKING/SLED SERVO, RF AMP)

Pin No.	Pin Name	I/O	Function
1	FIN2	I	Connected to the pick-up photodiode Added with FIN1 to create RF signal, subtracted with FIN1 to create FE signal
2	FIN1	I	Connected to the pick-up photodiode
3	E	I	Connected to the pick-up photodiode Subtracted with F to create TE signal
4	F	I	Connected to the pick-up photodiode
5	TB	I	DC component of the TE signal is input
6	TE–	I	Connects the TE signal gain setting resistor between TE pins
7	TE	O	TE signal output
8	TESI	I	TES (Track Error Sense) comparator input. The TE signal is band-passed and input
9	SCI	I	Shock detection input
10	TH	I	Tracking gain time constant setting
11	TA	O	TA amplifier output
12	TD–	I	Creates a tracking phase compensation constant between TD and VR pins
13	TD	O	Tracking phase compensation setting
14	JP	I	Tracking jump signal (kick pulse) amplitude setting
15	TO	O	Tracking control signal output
16	FD	O	Focusing control signal output
17	FD–	I	Creates a focusing phase compensation constant between FD and FA pins
18	FA	O	Creates a focusing phase compensation constant between FD- and FA- pins
19	FA–	I	Creates a focusing phase compensation constant between FA and FE pins
20	FE	O	FE signal output
21	FE–	I	Connects the FE signal gain setting resistor between TE pins
22	AGND	—	Analog signal Ground
23	SP	O	Single end output of CV+ and CV- pin signal
24	SPI	I	Spindle amplifier input
25	SPG	I	Gain setting resistor is connected when the spindle 12cm mode
26	SP–	I	Works together with the SPD pin to connect to the spindle phase compensation constant
27	SPD	O	Spindle control signal output
28	SLEQ	I	Sled phase compensation constant is connected
29	SLD	O	Sled control signal output
30	SL–	I	Sled feeding signal is input from the microprocessor
31	SL+	I	Sled feeding signal is input from the microprocessor
32	JP–	I	Tracking jump signal is input from the DSP
33	JP+	I	Tracking jump signal is input from the DSP
34	TGL	I	Tracking gain control signal is input from the DSP Gain becomes low when TGL is “H”
35	TOFF	I	Tracking off control signal is input from the DSP Tracking becomes off when TOFF is “H”
36	TES	O	Outputs TES signal to the DSP
37	HFL	O	HFL (High Frequency Level) is used to determine whether the main beam is positioned on a pit or a mirror

Pin No.	Pin Name	I/O	Function
38	SLOF	I	Sled servo off control input
39	CV–	I	CLV error signal is input from the digital signal processor
40	CV+	I	CLV error signal is input from the digital signal processor
41	RFSM	O	RF output
42	RFS–	I	Works together with the RFSM pin to set the RF gain and the 3T compensation constant for the EFM signal
43	SLC	O	SLI (Slice Level Control) is output to control a data slice level of the RF waveform by the digital signal processor
44	SLI	I	Input pin for controlling a data slice level by the digital signal processor
45	DGND	—	Digital Ground
46	FSC	O	Focus search smoothing capacitor output
47	TBC	I	TBC (Tracking Balance Control) sets a EF balance variable range
48	NC	—	Not used
49	DEF	O	Defect detection output for a disc
50	CLK	I	Reference clock input The 4.23 MHz of the digital signal processor is input
51	CL	I	Microprocessor command clock input
52	DAT	I	Microprocessor command data input
53	CE	I	Microprocessor command chip enable input
54	DRF	O	DRF (Defect RF) outputs a RF level detection
55	FSS	I	FSS (Focus Search Select) is a switching pin for the focus search mode (±search/+search for a reference voltage)
56	VCC2	—	Servo system and digital system VCC
57	RFFI	I	Reference voltage bus control is connected
58	VR	O	Reference voltage output
59	LF2	I	Constant setting for a disc defect detection
60	PH1	I	Connected to the capacitor for the RF signal peak hold
61	BH1	I	Connected to the capacitor for the RF signal bottom hold
62	LDD	O	APC circuit output
63	LDS	I	APC circuit input
64	VCC1	—	RF system VCC

• Abbreviation
EFM : Eight to Fourteen Modulation
APC : Auto Power Control

BD BOARD IC102 LC78622E (DIGITAL SIGNAL PROCESSOR)

Pin No.	Pin Name	I/O	Function
1	DEFI	I	Defect detection signal (DEF) input (Be sure to connect to 0 when not in use)
2	TAI	I	PLL test input to incorporates a pull-down resistor (Be sure to connect to 0V)
3	PDO	O	PLL phase comparison output for external VCO control
4	VVSS	—	PLL ground for the built-in VCO (Be sure to connect to 0 when not in use)
5	ISET	I	Connected to a current adjusting resistor for the PDO output
6	VVDD	—	Built-in VCO power supply
7	FR	I	Adjusts the VCO frequency range
8	VSS	—	Digital Ground to be sure to connect to 0
9	EFMO	O	Slice level control to EFM signal output
10	EFMIN	I	Slice level control to EFM signal input
11	TEST2	I	Test input to incorporates a pull-down resistor (Be sure to connect to 0V)
12	CLV+	O	Disc motor control output (3-value output available depending on the command)
13	CLV–	O	
14	V/P	O	Rough servo/phase control automatic switching monitor output “H”:rough servo, “L”:phase servo
15	HFL	I	Tracking detection signal input (Schmidt input)
16	TES	I	Tracking error signal input (Schmidt input)
17	TOFF	O	Tracking OFF output
18	TGL	O	Tracking gain switching output (Raises gain when “L”)
19	JP+	O	Track jump control output (3-value output available depending on the command)
20	JP–	O	
21	PCK	O	EFM data playback clock monitor (4.3218 MHz when phase is locked)
22	FSEQ	O	Sync signal detection output (“H” when a sync signal detected from the EFM signal and that generated internally coincide)
23	VDD	—	Digital power supply
24	CONT1	I/O	General purpose output 1. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)
25	CONT2	I/O	General purpose output 2. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)
26	CONT3	I/O	General purpose output 3. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)
27	CONT4	I/O	General purpose output 4. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)
28	CONT5	I/O	General purpose output 5. Performs control using a serial data command from the microprocessor (When not in use, connect to 0V by setting to an input or set to an open state by setting to an output)

- Abbreviation
  PLL : Phase Locked Loop
  EFM : Eight to Fourteen Modulation

Pin No.	Pin Name	I/O	Function
29	EMPH	O	Deemphasis monitor The deemphasis disc is being played back when “H”
30	C2F	O	C2 flag output
31	DOUT	O	Digital OUT output (EIAJ format)
32	TEST3	I	Test input Incorporates a pull-down resistor Be sure to connect to 0V
33	TEST4	I	Test input Incorporates a pull-down resistor Be sure to connect to 0V
34	NC	—	Not used Be sure to use it in an open state
35	MUTEL	O	L channel 1-bit DAC L channel mute output
36	LVDD	—	L channel 1-bit DAC L channel power supply
37	LCHO	O	L channel 1-bit DAC L channel output
38	LVSS	—	L channel 1-bit DAC L channel ground Be sure to connect to 0V
39	RVSS	—	R channel 1-bit DAC R channel ground Be sure to connect to 0V
40	RCHO	O	R channel 1-bit DAC R channel output
41	RVDD	—	R channel 1-bit DAC R channel power supply
42	MUTER	O	R channel 1-bit DAC R channel mute output
43	XVDD	—	Power supply for the crystal oscillator
44	XOUT	O	Connected to the 16.9344 MHz crystal oscillator
45	XIN	I	
46	XVSS	—	Ground for the crystal oscillator Be sure to connect to 0V
47	SBSY	O	Sync signal output for the subcode block
48	EFLG	O	C1, C2, single correction, and double correction monitor
49	PW	O	Subcode P, Q, R, S, T, U, W output
50	SFSY	O	Subcode frame sync signal output
			Rises when the subcode is in a standby
51	SBCK	I	Subcode read clock input Schmidt input (Connect to 0V when not in use)
52	FSX	O	7.35 kHz sync signal output divided from the crystal oscillation
53	WRQ	O	Subcode Q output standby output
54	RWC	I	Read/write control input Schmidt input
55	SQOUT	O	Subcode Q output
56	COIN	I	Command input from the microprocessor
57	CQCK	I	Command input fetching clock input or subcode extracting clock input from SQOUT Schmidt input
58	RES	I	LC78622 reset input Temporarily set to “L” when the power is turned ON
59	TEST11	O	Test output Use it in an open state (Normally, “L” output)
60	16M	O	16.9344 MHz output
61	4.2M	O	4.2336 MHz output
62	TEST5	I	Test input. Incorporates a pull-down resistor. Be sure to connect to 0V
63	CS	I	Chip select input Incorporates a pull-down resistor Be sure to connect to 0V when not in control
64	TEST1	I	Test input Does not incorporates a pull-down resistor Be sure to connect to 0V

Note) Supply the same potential to each power supply pin (VDD, VVDD, LVDD, RVDD, XVDD).

MAIN BOARD IC401 CXP84632-158Q (CD CHANGER CONTROL)

Pin No.	Pin Name	I/O	Function
1	—	—	Not used
2	ICSW	O	IC reset signal output
3	—	—	Not used
4	HHOUT	O	Plus one LED signal output
5	—	—	Not used
6 to 13	D0 to D7	I/O	SRAM data I/O
14 to 28	A0 to A14	O	SRAM address output
29	/WE	O	SRAM write enable output
30	RESET	I	Reset signal input
31	10MHz	O	X'tal(10MHz)
32	10MHz	I	X'tal(10MHz)
33	VSS	—	Ground
34, 35	—	—	Not used
36	AVSS	—	Analog ground
37	AVREF	I	Analog refernce voltage input
38 to 41	—	—	Not used
42	D-SENS	I	Disc detect sensor signal input
43 to 46	—	—	Not used
47	SLED-P	O	Sled motor control signal output
48	CLK	O	Clock signal output for LC78622E
49	SUBQ	I	CD sub-code input from LC78622E
50	DATA	O	Command output for LC78622E
51 to 53	—	—	Not used
54	FOK	I	DRF(FOK) signal input from LC78622E
55	WRQ	I	Sub-code synchronizing signal input from LC78622E
56	—	—	Not used
57	TGL	I	Tracking gain control signal input from LC78622E
58	RWC	O	RWC(latch) output for LC78622E
59	SLED-M	O	Sled motor control output
60	—	—	Not used
61 to 63	TSENS1 to TSENS3	I	Table sensor input
64	DQSY	I	Data synchronizing signal input from decoder
65	TCLK	O	Clock output for decoder
66	TDATA	I	Data input from decoder
67	TMODE	O	System down signal output for decoder
68	—	—	Not used
69	DOORSW	I	Front cover close detect input
70	OUTSW	I	Loading motor out detect input
71	INSW	I	Loading motor in detect input
72	VDD	—	Power supply(+5V)
73	—	—	Not used
74	TBLR	O	Table motor clock wise turn signal output
75	TBLL	O	Table motor counter clock wise turn signal output
76	LODOUT	O	Loading motor out direction signal output
77	LODIN	O	Loading motor in direction signal output
78	IICCLK	I	Serial data clock input
79	—	—	Not used
80	IICDAT	I/O	Serial data I/O

MAIN BOARD IC501 CXP84632-159Q (MASTER CONTROL)

Pin No.	Pin Name	I/O	Function
1	TDA DATA	O	Data signal output for IC101
2	NC	—	Not used
3	NC	—	Not used
4	NC	—	Not used
5	NC (VSS)	—	Not used (Ground)
6	PB MUTE	O	TC PB mute control signal output
7	REC MUTE	O	TC REC mute control signal output
8	PB A/B	O	TC PB deck-A/B selection output
9	REC A/B	O	TC REC deck-A/B selection output
10	TC RELAY	O	TC RELAY selection output
11	BIAS N/H	O	TC BIAS selection output (Not used)
12	R ON/OFF	O	Not used
13	EO H/M	O	Not used
14	CAPM H/L	O	Not used
15	CAPM CONT1P	O	Capstan motor control 1 (+) signal output
16	CAPM CONT1M	O	Capstan motor control 1 (–) signal output (Not used)
17	CAPM CONT2P	O	Capstan motor control 2 (+) signal output (Not used)
18	CAPM CONT2M	O	Capstan motor control 2 (–) signal output (Not used)
19	A TRG	O	A deck trigger motor control output
20	B TRG	O	B deck trigger motor control output
21	A PLAY	I	A deck play detect
22	B PLAY	I	B deck play detect
23	A HALF	I	A deck half detector signal input
24	NC	—	Not used
25	NC	—	Not used
26	NC	—	Not used
27	PWRSAVE	O	Power save selection output
28	CD POWER	O	CD power ON/OFF control output
29	SYS POWER	O	SYSTEM power ON/OFF control output
30	RST	I	System reset input
31	EXTAL	I	X'tal (10MHz) input
32	XTAL	O	X'tal (10MHz) output
33	VSS	—	Ground
34	TX	—	Not used
35	TEX (VSS)	—	Not used (Ground)
36	AVSS	—	Analog ground
37	AVREF	I	Analog reference voltage input
38	B MODE	I	B deck half detector signal input
39	A SHUT	I	A deck reel pulse detector input
40	B SHUT	I	B deck reel pulse detector input
41	AMS	I	AMS signal input
42	NC	—	Not used
43	TEST	O	Not used
44	CLK CHK	O	Not used
45	SPEC	I	Versin select signal input
46	MODEL	O	Not used
47	ST CE	O	Tuner chip enable output
48	ST CLK	O	Tuner clock output
49	ST DIN	I	Tuner data input
50	ST DOUT	O	Tuner data output

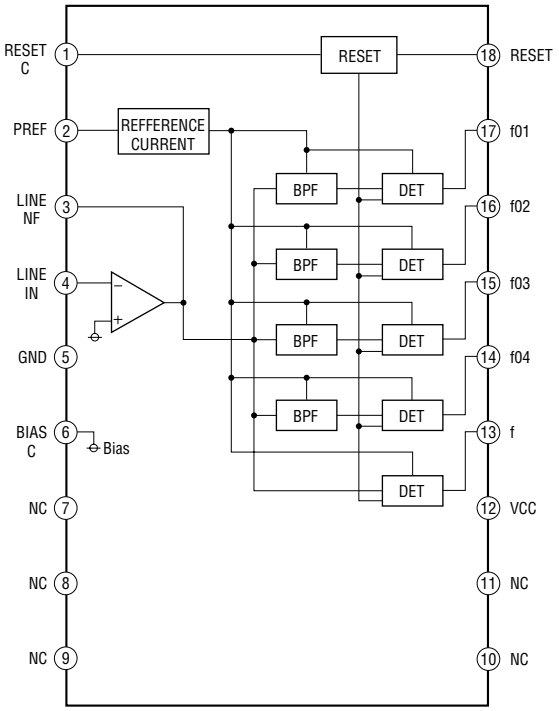
Pin No.	Pin Name	I/O	Function
51	STEREO	I	Stereo detection for tuner
52	TUNED	I	Tuned detection for tuner
53	NC	—	Not used
54	NC (VSS)	—	Not used (Connect to ground)
55	NC (VSS)	—	Not used (Connect to ground)
56	NC (VSS)	—	Not used (Connect to ground)
57	NC (VSS)	—	Not used (Connect to ground)
58	NC	—	Not used
59	NC	—	Not used
60	AC CUT	I	AC power down
61	F RELAY	O	Main speaker relay control signal output
62	DBFB ON/OFF	O	DBFB ON/OFF select signal output
63	DBFB H/N	O	DBFB H/N select signal output
64	MO FUNC	O	MD mute signal output
65	PL CLK	O	CLK signal output for IC201 (M62464)
66	PL CE	O	Chip enable output for IC201 (M62464)
67	PL DOUT	O	Data signal output for IC201 (M62464)
68	PL RELAY	O	Surround speaker relay control signal output
69	DVD SEL	O	DVD select output
70	MUTE CENTER	O	Center speaker mute signal output
71	MUTE REAR	O	Rear speaker mute signal output
72	VDD	—	Power supply
73	NC (VDD)	—	Not used (Power supply)
74	LINE MUTE	O	Line mute signal output
75	STK MUTE	O	STK ON/OFF selection output
76	ST MUTE	O	Tuner mute signal output
77	TC MUTE	O	TC mute signal output
78	IIC CLK	I/O	Serial data clock input/output
79	TDA CLK	O	Clock signal output for IC101
80	IIC DATA	I/O	Serial data input/output

PANEL BOARD IC601 TMP87CM74AF-1G57 (DISPLAY CONTROL)

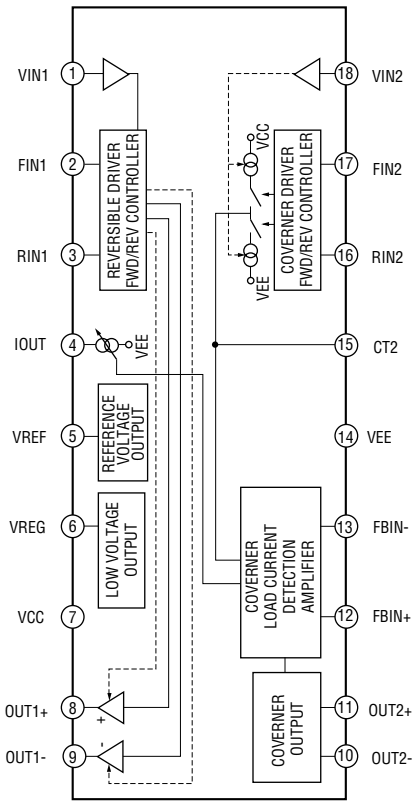
Pin No.	Pin Name	I/O	Function
1 to 6	LED3 to LED8	O	LED driver output
7	VSS	—	Ground
8	XOUT	O	X'tal (8MHz)
9	XIN	I	X'tal (8MHz)
10	RESET	I	Reset signal input
11, 12	LED9, LED10	O	LED driver output
13	TEST	—	Not used
14 to 18	LED11 to LED15	O	LED driver output
19, 20	VOLA, VOLB	I	Rotaly encoder pulse input for Volume
21, 22	JOGA, JOGB	I	Rotaly encoder pulse input for Jog
23	SCL(IIC)	I	Serial data clock input
24	SDA(IIC)	I	Serial data input
25	LED SELECT	O	LED select signal output
26 to 29	KEY0 to KEY3	I	Key input
30	MODEL	I	Model No. input
31	LED16	O	LED driver output
32	L+R	I	Spectrum analyzer (high frequency) input
33	SIRCS	I	Remote commander signal input
34 to 37	SPEANA0 to SPEANA3	I	Spectrum analyzer signal input
38	AVSS	—	Ground
39	VAREF	—	Analog reference voltage input
40	VDD	—	Power supply (+5V)
41 to 53	GRID1 to GRID13	O	Fluorescent disply tube gride signal output
54 to 77	SEG1 to SEG24	O	Fluorescent disply tube segment signal output
78	VKK	—	—
79, 80	LED1, LED2	O	LED driver output

6-26. IC BLOCK DIAGRAMS

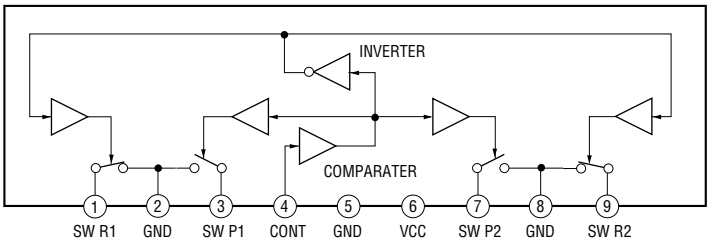
IC603 (PANEL BOARD) BA3833F-E2



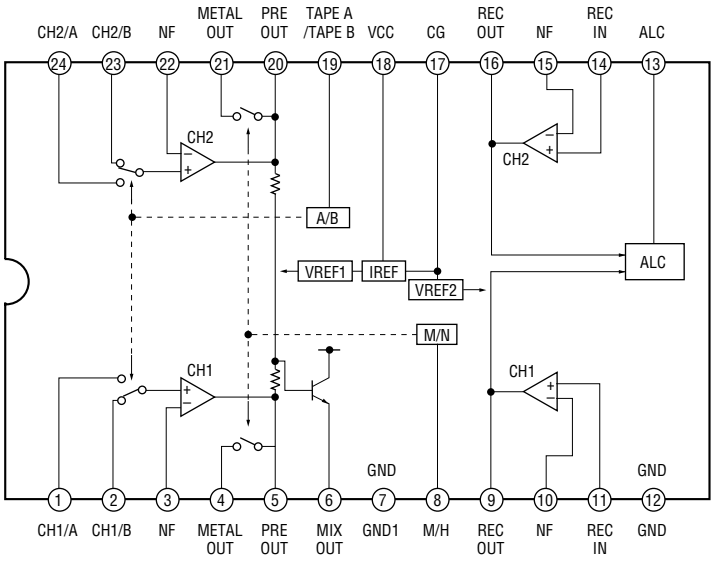
IC461 (MAIN BOARD) BA6780



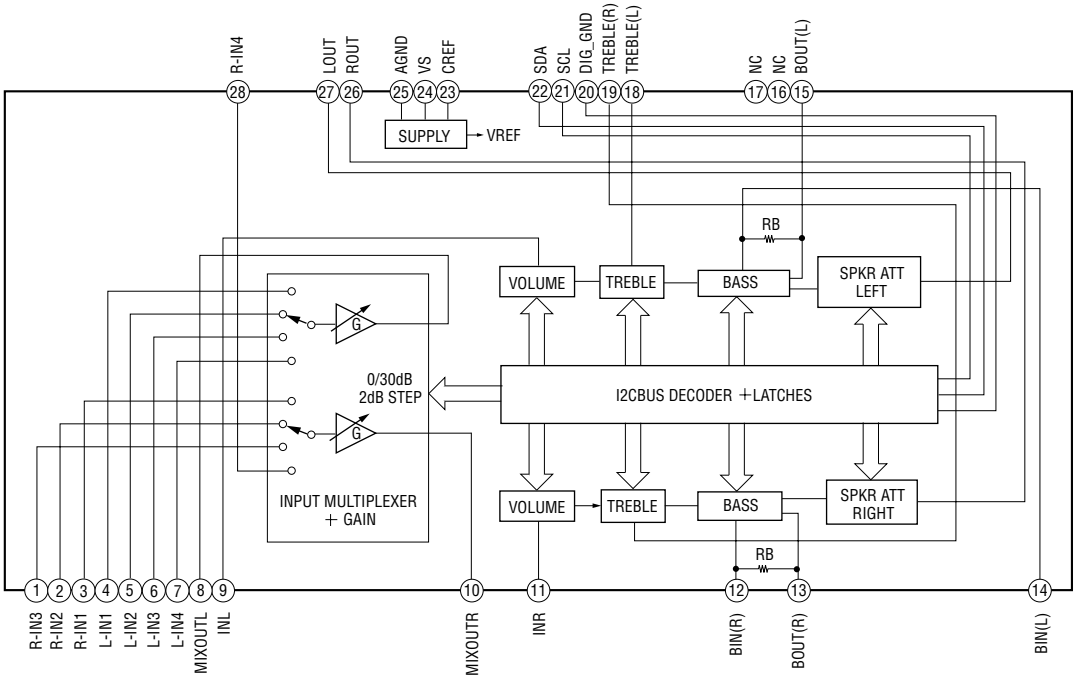
IC361 (CASSETTE BOARD) uPC1330HA



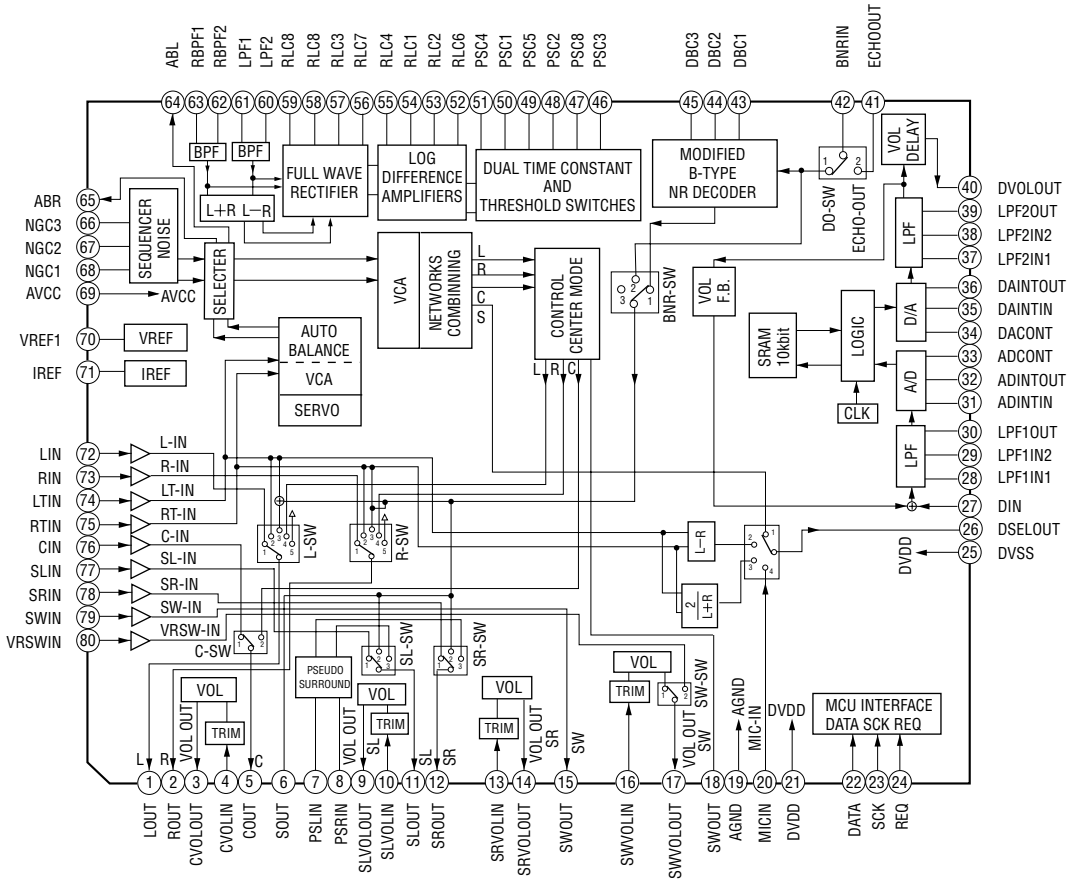
IC301 (CASSETE BOARD) TA8189N



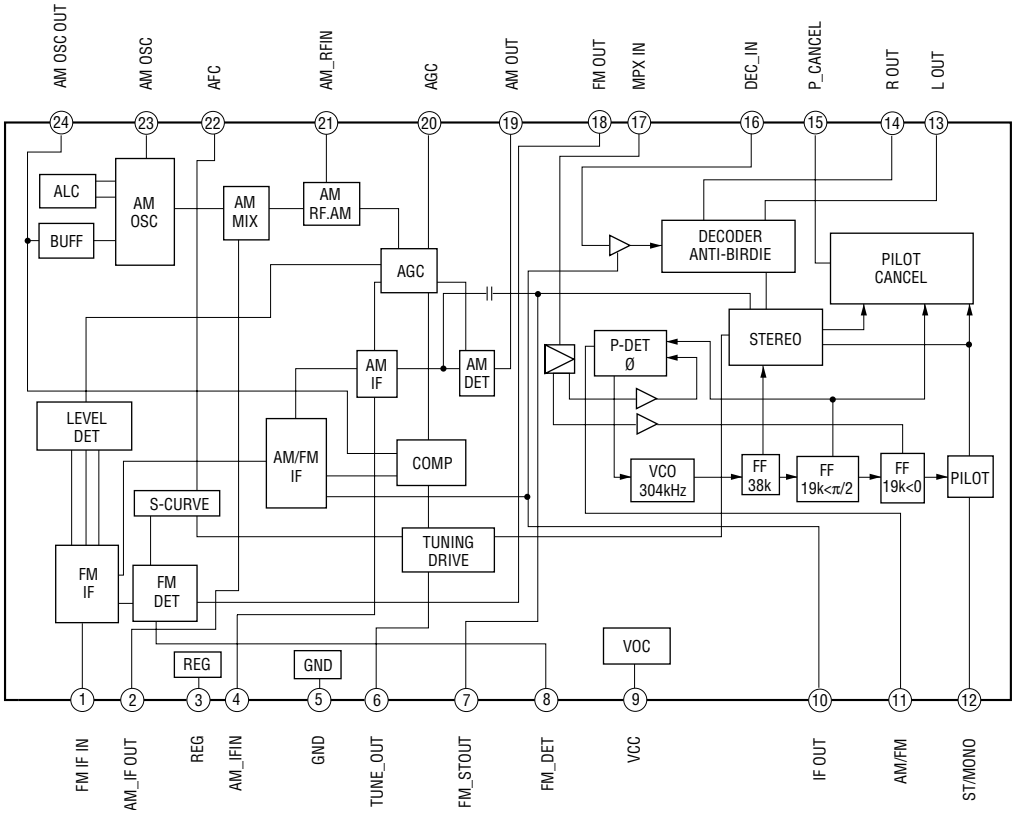
IC101 (MAIN BOARD) TDA7440D



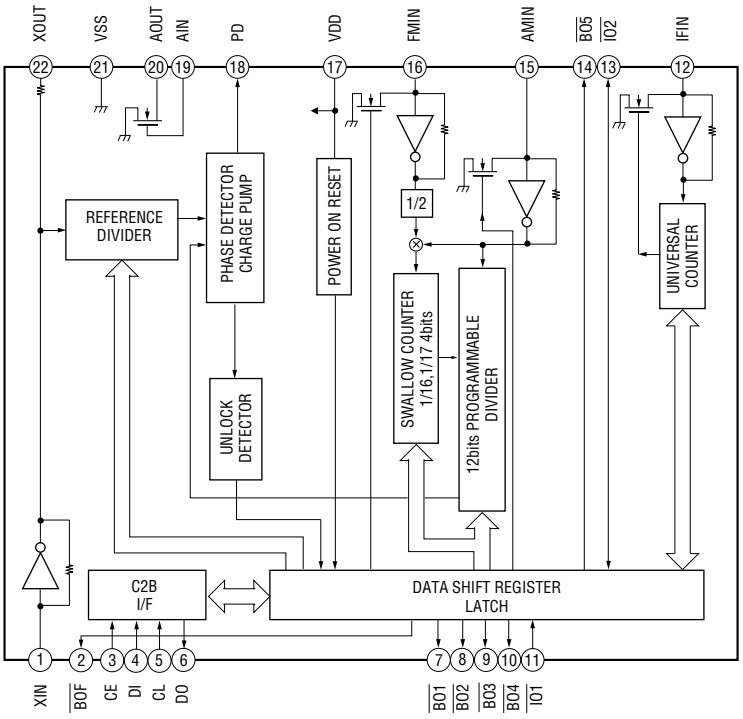
IC201 (MAIN BOARD) M62464FP



IC1 (MAIN BOARD) LA1833N



IC2 (MAIN BOARD) LC72136

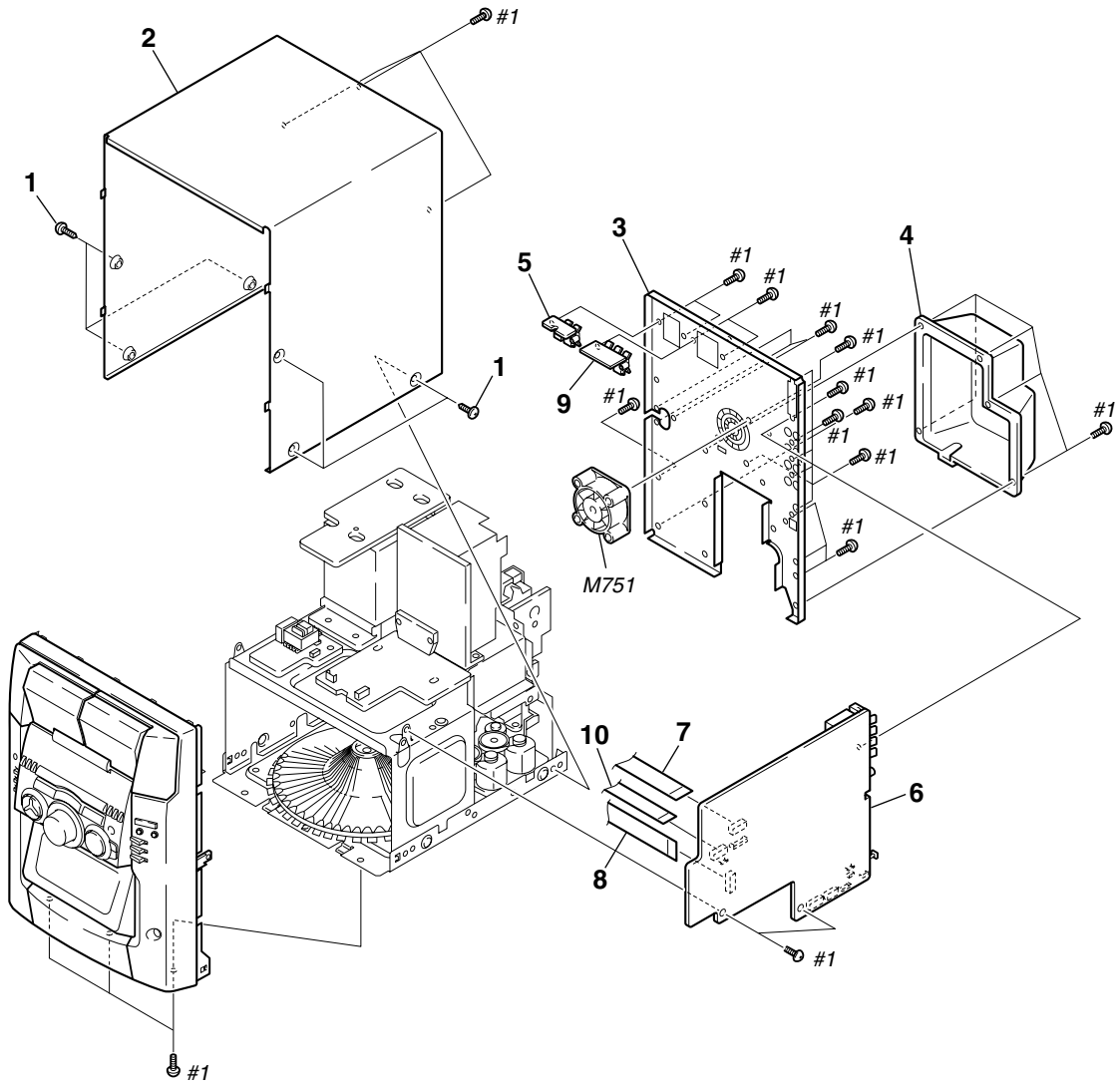


SECTION 7
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

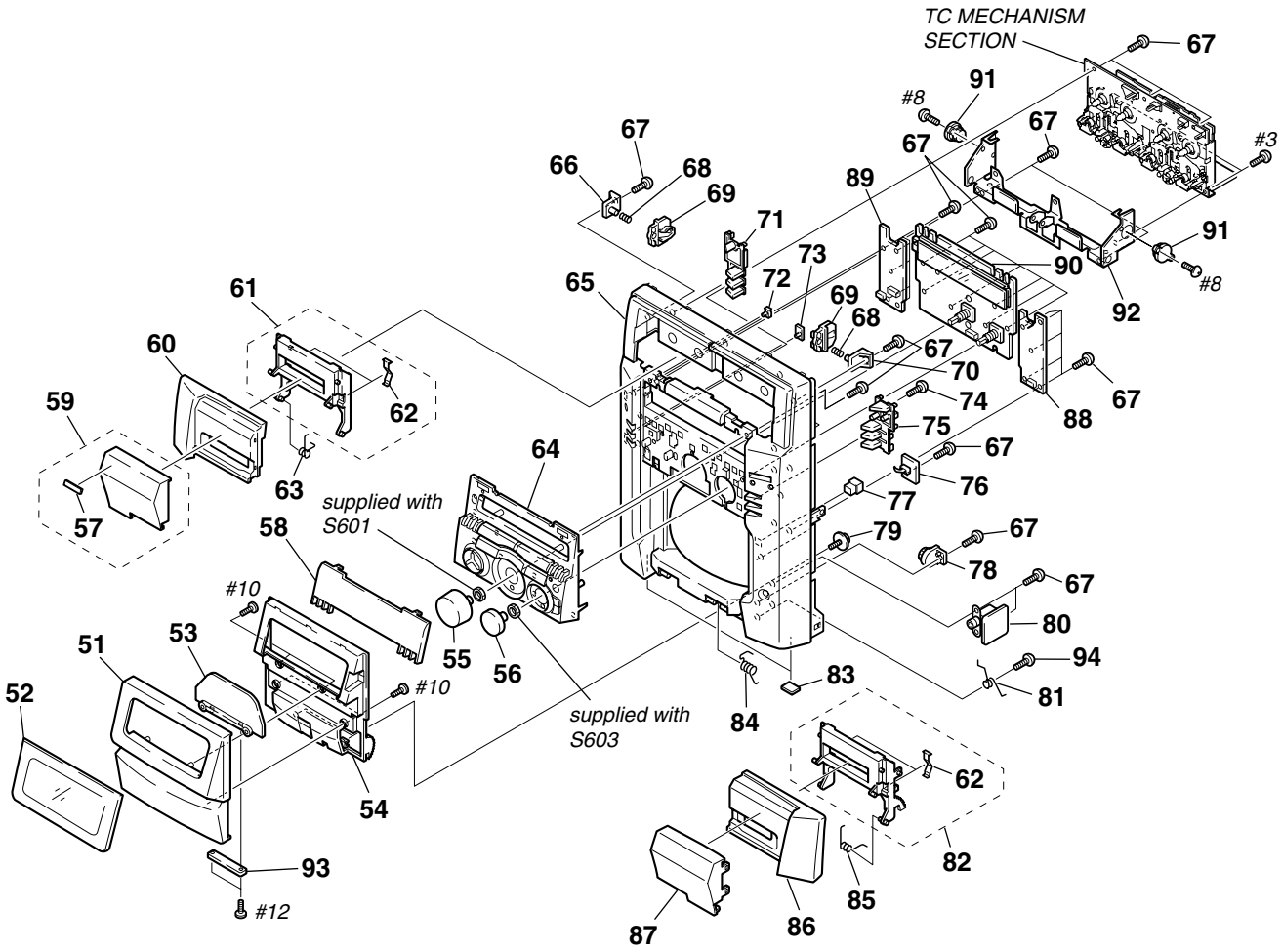
7-1. CASE SECTION



Ref. No.	Part No.	Description	Remarks
1	3-363-099-01	SCREW (CASE 3 TP2)	
2	4-230-340-01	CASE	
3	4-230-810-01	PANEL BACK	
* 4	4-990-365-11	COVER	
5	1-677-246-11	FRONT SP TERM BOARD	
6	A-4475-215-A	MAIN BOARD, COMPLETE	

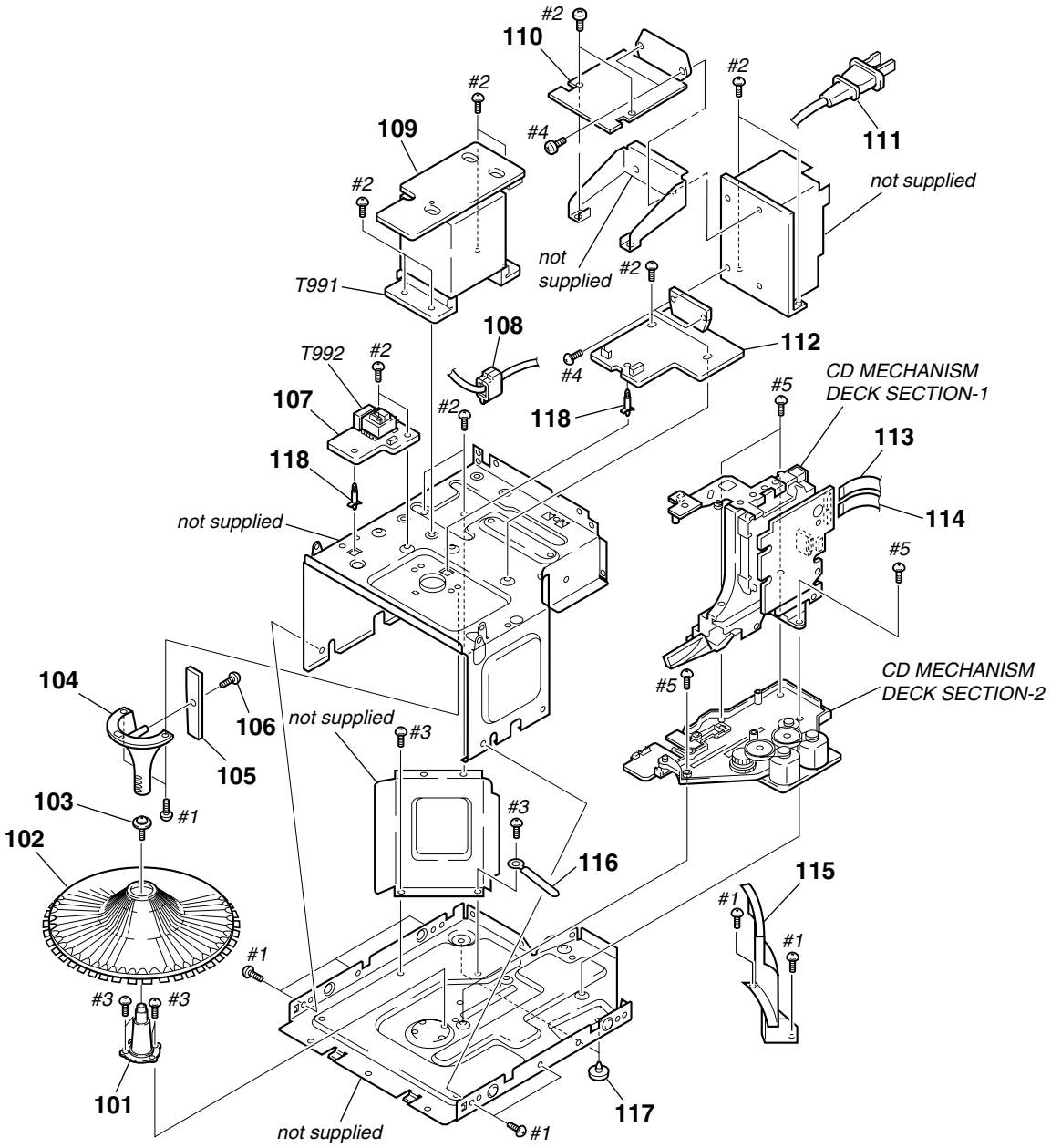
Ref. No.	Part No.	Description	Remarks
7	1-757-074-11	WIRE (FLAT TYPE) (12 CORE)	
8	1-773-055-11	WIRE (FLAT TYPE) (17 CORE)	
9	1-677-249-11	REAR SP TERM BOARD	
10	1-757-073-11	WIRE (FLAT TYPE) (10 CORE)	
M751	1-763-548-11	MOTOR, DC FAN	

7-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remarks
51	4-230-354-01	CD DOOR (FRONT)	
52	4-230-355-01	PLATE (CD DOOR)	
53	4-230-811-01	PLATE (CD DOOR LENS)	
54	4-230-356-01	CD DOOR (REAR)	
55	4-230-343-01	KNOB (VOLUME)	
56	4-230-342-01	KNOB (SELECTOR)	
57	4-962-708-52	EMBLEM (4-A), SONY	
58	4-230-341-01	DECORATION PANEL	
59	A-4412-482-A	WINDOW (L) ASSY, CASSET	
60	4-230-344-01	LID(L) CASSETTE	
61	A-4412-485-A	HOLDER (L) ASSY, CASSET	
62	4-959-229-11	DETENT, CASSETTE	
63	4-999-686-01	SPRING (A DECK)	
64	A-4412-532-A	PANEL ASSY, CONTROL	
65	4-230-404-01	CABINET FRONT	
66	4-222-506-01	BRACKET, (LOCK L)	
67	4-951-620-01	SCREW (2.6X8), +BVTP	
68	4-222-537-01	SPRING (LOCK), COMPRESSION	
69	4-222-505-01	HOLDER, LOCK	
70	4-222-503-01	BRACKET, (LOCK R)	
71	4-230-350-01	BUTTON (POWER)	
72	4-230-349-01	INDICATOR (POWER SAVE)	
73	4-230-351-01	INDICATOR (TIME SELECT)	
74	4-230-378-01	INDICATOR (DSP)	
75	4-230-377-01	BUTTON (FUNCTION)	
76	1-677-243-11	CD DOOR BOARD	
77	4-989-312-01	LATCH, NS	
78	3-354-963-01	DAMPER	
79	4-957-577-31	SCREW PTP WH (2.6X8) (DIA. 10)	
80	1-677-245-11	PHONE BOARD	
81	4-230-348-01	SPRING (DOOR2) TORSION	
82	A-4412-486-A	HOLDER (R) ASSY, CASSET	
83	4-977-358-31	CUSHION	
84	4-230-352-01	SPRING (DOOR1) TORSION	
85	4-999-687-01	SPRING (B DECK)	
86	4-230-346-01	LID (R) CASSETTE	
87	4-230-345-01	WINDOW (R) CASSETTE	
88	1-677-240-11	PANEL R BOARD	
89	1-677-239-11	PANEL L BOARD	
90	A-4475-218-A	PANEL BOARD, COMPLETE	
* 91	3-973-975-21	DAMPER, OIL	
* 92	4-999-677-01	BRACKET (TC)	
93	1-677-237-11	DOOR LED BOARD	
94	4-933-134-61	SCREW (+PTPWH M2.6X6)	

7-3. CHASSIS SECTION

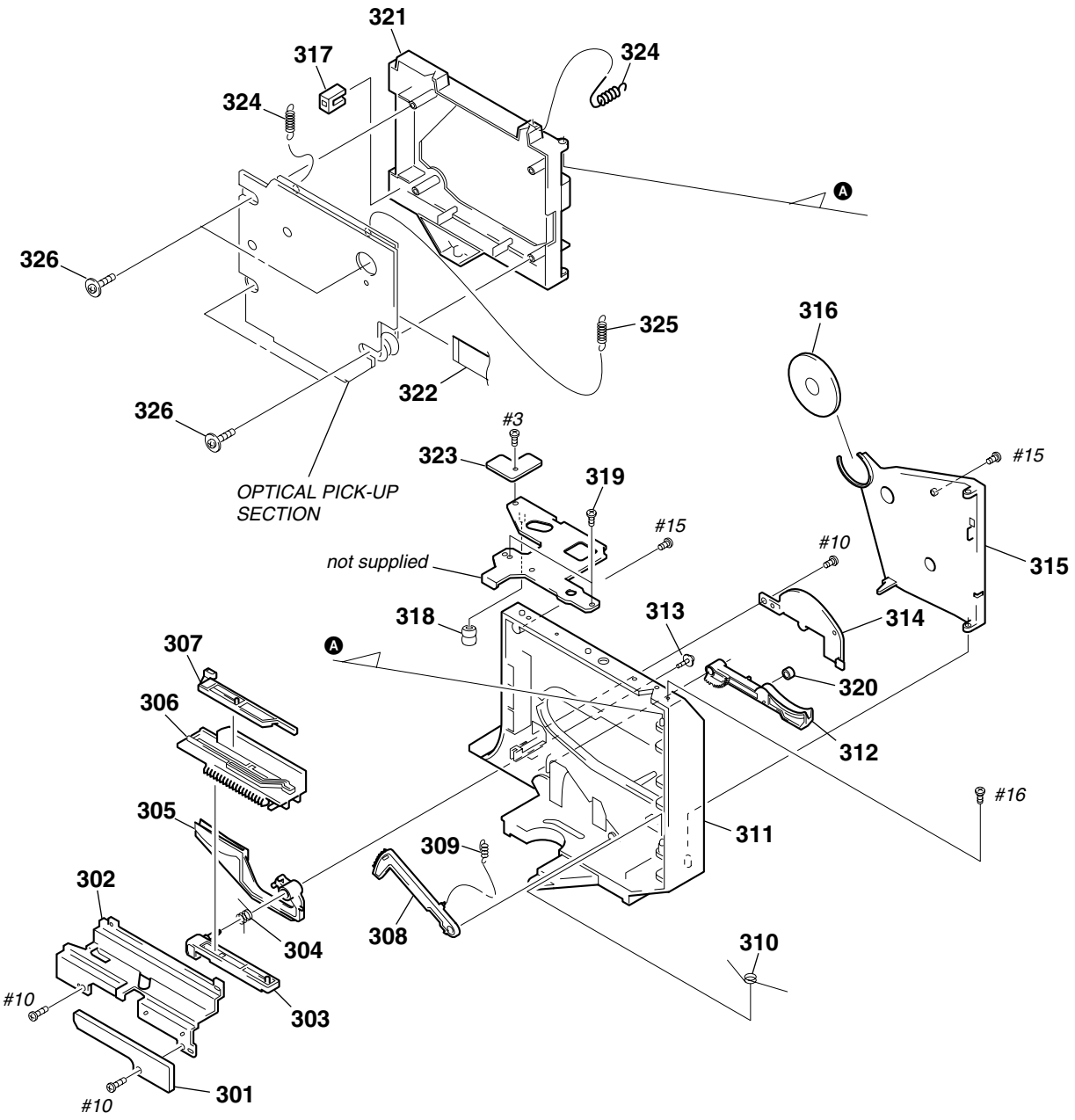


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
101	4-988-439-01	HOLDER, TABLE	
102	4-988-434-01	TABLE (50)	
103	4-957-577-31	SCREW PTP WH (2.6X8) (DIA. 10)	
* 104	4-990-371-11	HOLDER (LED)	
105	1-677-236-11	CD LED BOARD	
106	4-951-620-01	SCREW (2.6X8), +BVTP	
107	1-677-247-11	SUB TRANS BOARD	
108	3-703-244-00	BUSHING (2104), CORD	
109	1-677-242-11	TRANS BOARD	
110	A-4475-219-A	REAR AMP BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remarks
⚠ 111	1-783-531-21	CORD, POWER	
112	A-4475-078-A	FRONT AMP BOARD, COMPLETE	
113	1-782-558-21	WIRE (FLAT TYPE) (16 CORE)	
114	1-769-920-11	WIRE (FLAT TYPE) (9 CORE)	
* 115	4-990-370-11	COVER (CD)	
116	3-701-822-01	HOLDER, WIRE	
117	4-965-822-01	FOOT	
* 118	4-924-098-01	HOLDER, PC BOARD	
⚠ T991	1-435-560-11	TRANSFORMER, POWER	
⚠ T992	1-435-613-11	TRANSFORMER, POWER	

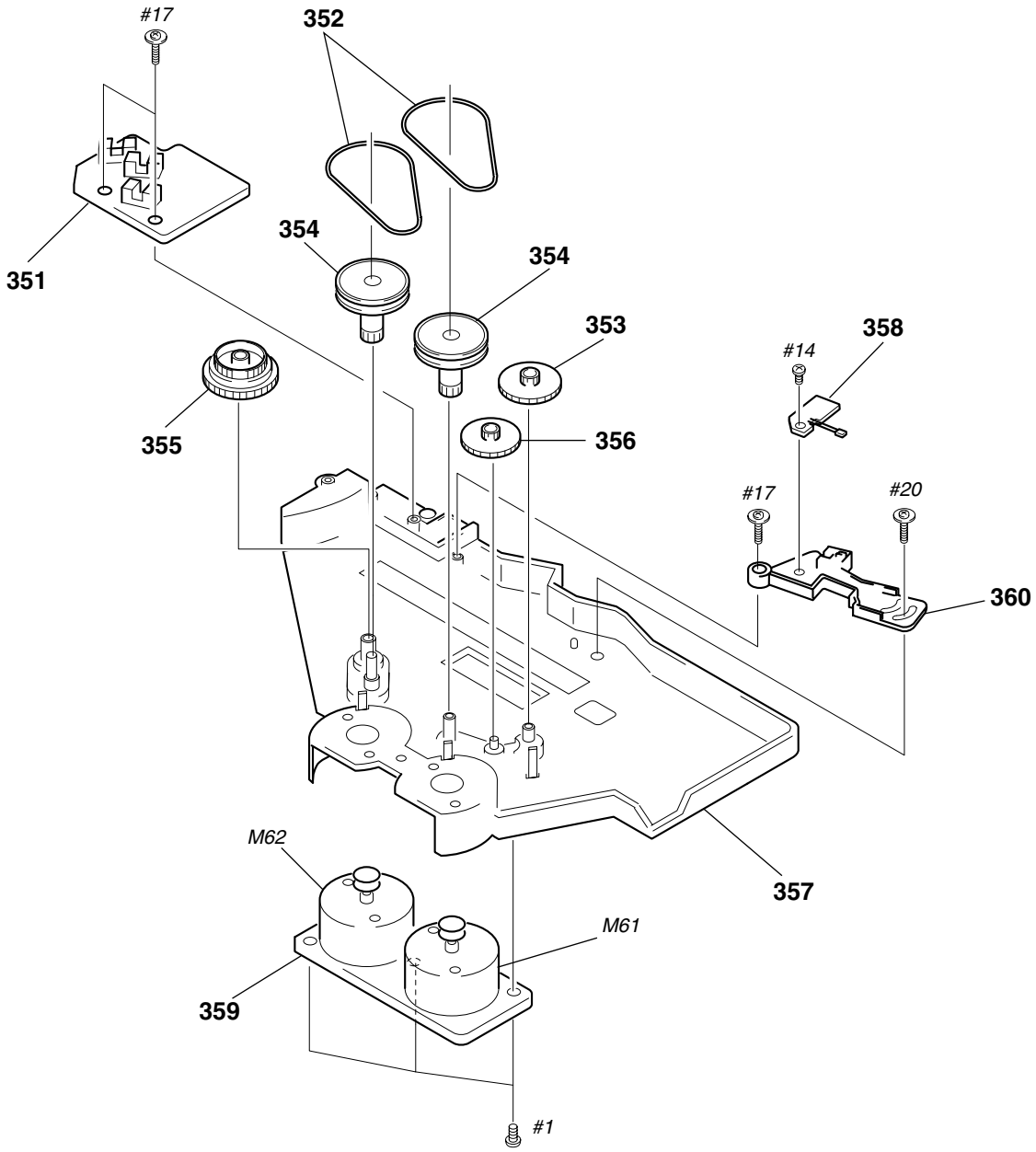
7-4. MECHANISM DECK SECTION-1 (CDM46B1)



Ref. No.	Part No.	Description	Remarks
* 301	1-663-975-11	SW BOARD	
* 302	4-988-427-01	COVER, CAM	
303	4-988-420-01	SLIDER (LOADING)	
304	4-988-436-01	SPRING (LOADING), TORSION	
305	4-988-418-01	HOLDER (A), DISC	
* 306	4-988-417-01	SLIDER (CAM)	
307	4-988-433-01	SLIDER (LOCK)	
308	X-4948-020-1	LEVER (LOADING) ASSY	
309	4-988-438-01	SPRING (LEVER), TENSION	
310	4-988-437-01	SPRING (HOLDER), TORSION	
* 311	4-988-416-01	BASE, LOADING	
312	4-988-419-01	HOLDER (B), DISC	
313	4-992-069-01	SCREW (+PTPWH) (M2) (DIA. 7)	

Ref. No.	Part No.	Description	Remarks
* 314	4-988-454-01	COVER (LEVER)	
* 315	4-988-421-01	HOLDER (MAGNET)	
316	A-4672-522-A	MAGNET ASSY	
317	4-992-413-02	STOPPER	
318	3-910-095-31	RUBBER, VIBRATION PROOF	
319	4-951-620-01	SCREW (2.6X8), +BVTP	
320	4-988-431-01	ROLLER (DISC)	
321	X-4948-019-1	HOLDER ASSY, BU	
322	1-777-874-11	WIRE (FLAT TYPE) (16 CORE)	
* 323	1-663-973-11	DISC SENSOR (S) BOARD	
324	4-988-440-01	SPRING (F-1), TENSION	
325	4-988-441-01	SPRING (F-2), TENSION	
326	4-957-577-21	SCREW PTP WH (2.6X8) (DIA. 10)	

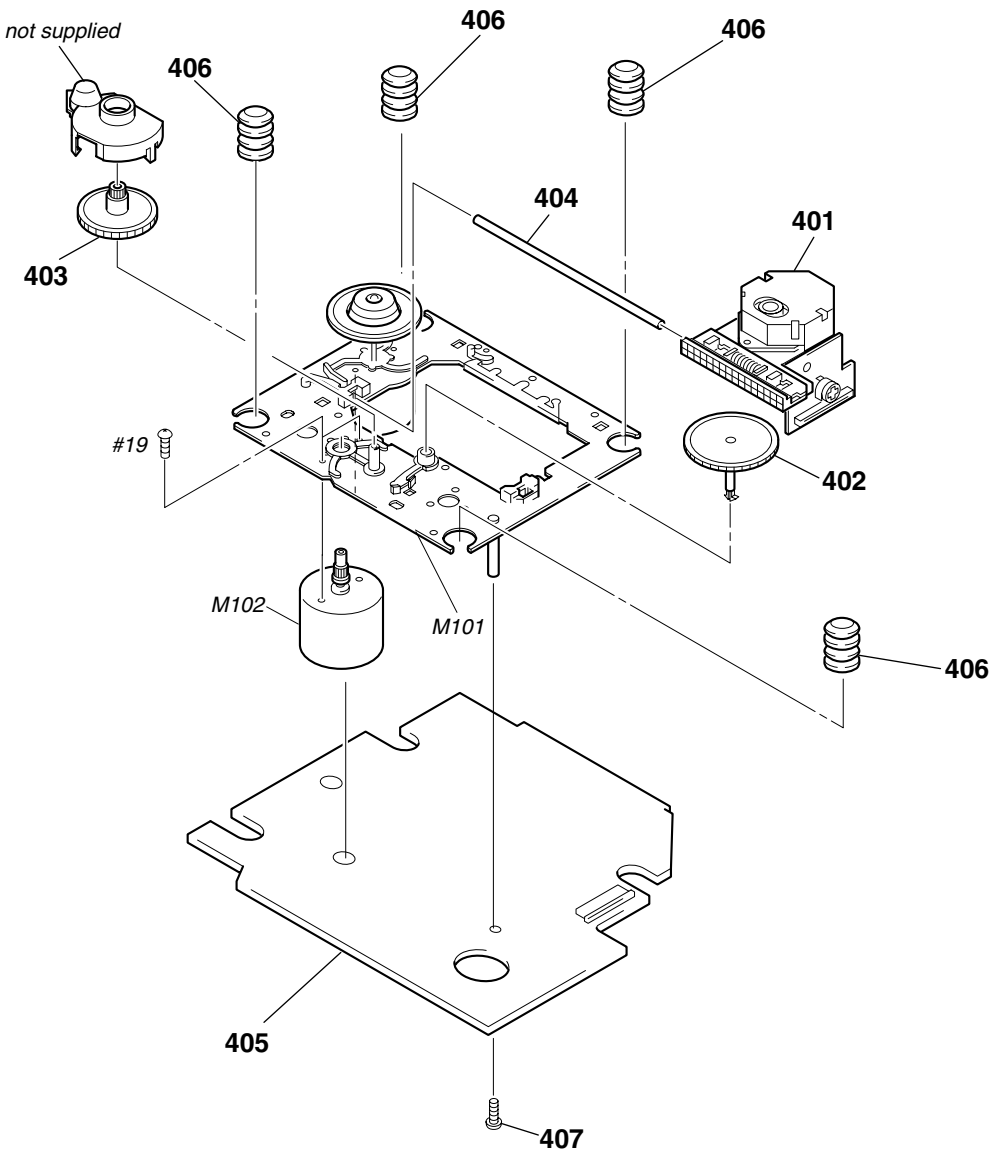
7-5. MECHANISM DECK SECTION-2 (CDM-46B1)



Ref. No.	Part No.	Description	Remarks
* 351	1-663-971-11	TABLE SENSOR BOARD	
352	4-988-414-01	BELT	
353	4-988-423-01	GEAR (A) (LOADING)	
354	4-988-425-01	PULLEY	
355	4-988-424-01	GEAR (TABLE)	
356	4-988-432-01	GEAR (B) (LOADING)	

Ref. No.	Part No.	Description	Remarks
* 357	4-988-426-01	BASE (CDM)	
* 358	1-663-972-11	DISC SENSOR (R) BOARD	
* 359	1-663-974-11	CD MOTOR BOARD	
360	4-990-669-02	HOLDER (SENSOR)	
M61	X-4948-434-1	MOTOR ASSY (LOADING)	
M62	X-4948-434-1	MOTOR ASSY (TABLE)	

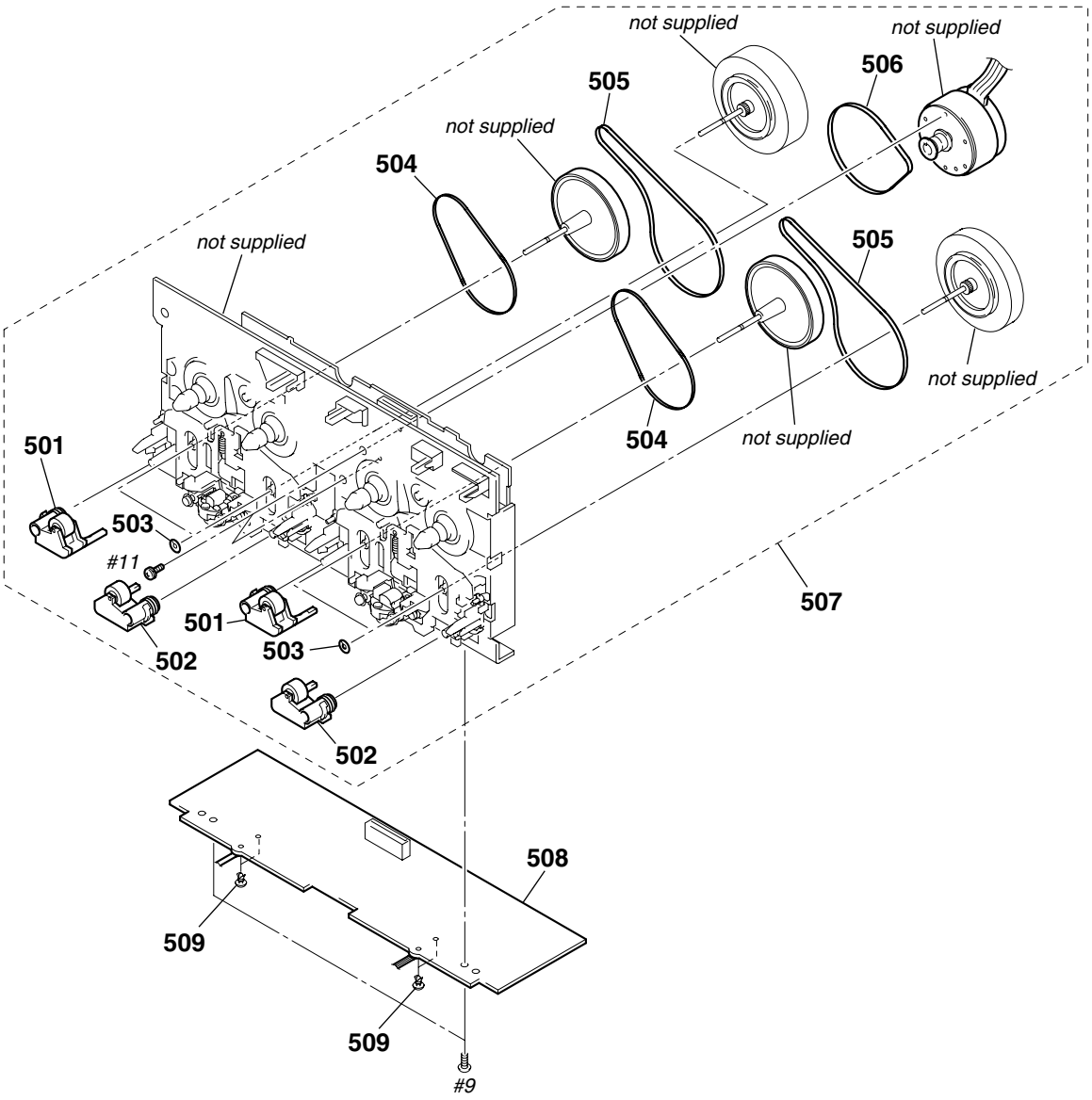
7-6. OPTICAL PICK UP SECTION (KSM-213BFN/C2NP)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
⚠401	8-820-026-03	OPTICAL PICK-UP KSM-213BFN/C2NP	
402	2-626-907-01	GEAR (A)(S)	
403	2-627-003-02	GEAR (B)(RP)	
404	2-626-908-01	SHAFT, SLED	
* 405	A-4699-869-A	BD BOARD, COMPLETE	
* 406	4-992-054-01	RUBBER, VIBRATION PROOF	
407	4-996-243-01	SCREW (M2), +PSW	
M101	X-2646-110-1	T.T CHASSIS ASSY (MG)(F)(SPINDLE)	
M102	X-2625-769-1	MOTOR GEAR ASSY (MB)(RP)(SLED)	

7-7. TAPE MECHANISM DECK SECTION (TCM-230AWR21)



Ref. No.	Part No.	Description	Remarks
501	X-3374-156-4	PINCH LEVER (REV) ASSY	
502	X-3374-155-4	PINCH LEVER (FWD) ASSY	
503	3-019-208-01	WASHER, STOPPER	
504	3-041-947-01	BELT (FR)	
505	3-041-946-01	BELT (CAPSTAN B)	
506	4-227-239-01	BELT (CAPSTAN C)	
507	A-2100-912-A	TODECK (TCM-230AWR21)	
508	A-4475-079-A	CASSETTE BOARD, COMPLETE	
509	3-036-914-01	RIVET	

BD

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
*	A-4699-869-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-164-489-11	CERAMIC CHIP	0.22uF	10.00%	16V
C104	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C105	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C106	1-110-501-11	CERAMIC CHIP	0.33uF	10.00%	16V
C107	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C108	1-164-492-11	CERAMIC CHIP	0.15uF	10.00%	16V
C109	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C110	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C111	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C112	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C113	1-164-492-11	CERAMIC CHIP	0.15uF	10.00%	16V
C114	1-164-492-11	CERAMIC CHIP	0.15uF	10.00%	16V
C115	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C116	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C117	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C118	1-107-823-11	CERAMIC CHIP	0.47uF	10.00%	16V
C119	1-164-489-11	CERAMIC CHIP	0.22uF	10.00%	16V
C120	1-124-234-00	ELECT	22uF	20%	16V
C121	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C122	1-126-963-11	ELECT	4.7uF	20.00%	50V
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C124	1-104-396-11	ELECT	10uF	20.00%	16V
C125	1-126-177-11	ELECT	100uF	20%	10V
C126	1-126-177-11	ELECT	100uF	20%	10V
C127	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C128	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C129	1-110-501-11	CERAMIC CHIP	0.33uF	10.00%	16V
C130	1-104-665-11	ELECT	100uF	20.00%	10V
C131	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C132	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C133	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C142	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C151	1-107-725-11	CERAMIC CHIP	0.1uF	10.00%	16V
C152	1-107-725-11	CERAMIC CHIP	0.1uF	10.00%	16V
C153	1-107-725-11	CERAMIC CHIP	0.1uF	10.00%	16V
C154	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C155	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C156	1-163-085-00	CERAMIC CHIP	2PF		50V
C157	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C158	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C159	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C160	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C161	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C162	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C163	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C164	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C165	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C166	1-104-665-11	ELECT	100uF	20.00%	10V
C167	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C171	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C172	1-126-177-11	ELECT	100uF	20%	10V
C173	1-124-589-11	ELECT	47uF	20%	16V
C174	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C175	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C181	1-104-664-11	ELECT	47uF	20.00%	16V
C182	1-104-664-11	ELECT	47uF	20.00%	16V
C183	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C184	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
		< CONNECTOR >			
CN101	1-770-173-11	CONNECTOR, FFC/FPC 16P			
CN102	1-568-859-11	SOCKET, CONNECTOR 16P			
* CN103	1-568-852-11	SOCKET, CONNECTOR 9P			
		< DIODE >			
D151	8-719-991-33	DIODE 1SS133T-77			
		< IC >			
IC101	8-759-449-64	IC LA9240M			
IC102	8-759-449-65	IC LC78622E			
IC103	8-759-449-66	IC LA6541			
IC104	8-759-428-57	IC LC89170M			
		< JUMPER RESISTOR >			
JW1	1-216-295-91	SHORT	0		
JW2	1-216-295-91	SHORT	0		
JW4	1-216-295-91	SHORT	0		
JW5	1-216-295-91	SHORT	0		
JW6	1-216-295-91	SHORT	0		
JW7	1-216-295-91	SHORT	0		
JW8	1-216-295-91	SHORT	0		

Ref. No.	Part No.	Description			Remarks
JW9	1-216-295-91	SHORT	0		
JW10	1-216-295-91	SHORT	0		
		< TRANSISTOR >			
Q101	8-729-230-45	TRANSISTOR 2SC2458TP-YGR			
Q102	8-729-230-45	TRANSISTOR 2SC2458TP-YGR			
Q103	8-729-119-76	TRANSISTOR 2SA1175TP-HFE			
		< RESISTOR >			
R101	1-216-097-91	RES-CHIP	100K	5%	1/10W
R102	1-216-093-91	RES-CHIP	68K	5%	1/10W
R103	1-216-093-91	RES-CHIP	68K	5%	1/10W
R104	1-216-093-91	RES-CHIP	68K	5%	1/10W
R105	1-216-093-91	RES-CHIP	68K	5%	1/10W
R106	1-216-097-91	RES-CHIP	100K	5%	1/10W
R107	1-216-097-91	RES-CHIP	100K	5%	1/10W
R108	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R109	1-216-076-00	METAL CHIP	13K	5%	1/10W
R110	1-216-093-91	RES-CHIP	68K	5%	1/10W
R111	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R112	1-216-101-00	METAL CHIP	150K	5%	1/10W
R113	1-216-099-00	METAL CHIP	120K	5%	1/10W
R114	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R115	1-216-085-00	METAL CHIP	33K	5%	1/10W
R116	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R117	1-216-085-00	METAL CHIP	33K	5%	1/10W
R118	1-216-081-00	METAL CHIP	22K	5%	1/10W
R119	1-216-064-00	METAL CHIP	4.3K	5%	1/10W
R120	1-216-085-00	METAL CHIP	33K	5%	1/10W
R121	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R122	1-216-083-00	METAL CHIP	27K	5%	1/10W
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W
R124	1-216-093-91	RES-CHIP	68K	5%	1/10W
R125	1-216-089-91	RES-CHIP	47K	5%	1/10W
R126	1-216-037-00	METAL CHIP	330	5%	1/10W
R127	1-216-089-91	RES-CHIP	47K	5%	1/10W
R128	1-216-077-91	RES-CHIP	15K	5%	1/10W
R129	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R130	1-216-113-00	METAL CHIP	470K	5%	1/10W
R131	1-216-113-00	METAL CHIP	470K	5%	1/10W
R132	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R133	1-216-113-00	METAL CHIP	470K	5%	1/10W
R134	1-216-113-00	METAL CHIP	470K	5%	1/10W
R135	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R137	1-216-009-91	RES-CHIP	22	5%	1/10W
R138	1-216-089-91	RES-CHIP	47K	5%	1/10W
R141	1-216-083-00	METAL CHIP	27K	5%	1/10W
R151	1-216-045-00	METAL CHIP	680	5%	1/10W
R152	1-216-093-91	RES-CHIP	68K	5%	1/10W
R153	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R154	1-216-085-00	METAL CHIP	33K	5%	1/10W
R155	1-216-089-91	RES-CHIP	47K	5%	1/10W
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W
R157	1-216-077-91	RES-CHIP	15K	5%	1/10W
R158	1-216-049-91	RES-CHIP	1K	5%	1/10W
R159	1-216-083-00	METAL CHIP	27K	5%	1/10W
R160	1-216-037-00	METAL CHIP	330	5%	1/10W
R161	1-216-073-00	METAL CHIP	10K	5%	1/10W
R162	1-216-037-00	METAL CHIP	330	5%	1/10W
R163	1-216-049-91	RES-CHIP	1K	5%	1/10W
R164	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R165	1-216-025-91	RES-CHIP	100	5%	1/10W
R166	1-216-025-91	RES-CHIP	100	5%	1/10W
R171	1-216-025-91	RES-CHIP	100	5%	1/10W
R172	1-216-025-91	RES-CHIP	100	5%	1/10W
R173	1-216-025-91	RES-CHIP	100	5%	1/10W
R174	1-216-025-91	RES-CHIP	100	5%	1/10W
R181	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R182	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R183	1-216-073-00	METAL CHIP	10K	5%	1/10W
R184	1-216-073-00	METAL CHIP	10K	5%	1/10W
R191	1-216-025-91	RES-CHIP	100	5%	1/10W
R192	1-216-041-00	METAL CHIP	470	5%	1/10W
R193	1-216-041-00	METAL CHIP	470	5%	1/10W
R194	1-216-025-91	RES-CHIP	100	5%	1/10W
R195	1-216-041-00	METAL CHIP	470	5%	1/10W
R196	1-216-025-91	RES-CHIP	100	5%	1/10W
R197	1-216-025-91	RES-CHIP	100	5%	1/10W
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF(LIMIT SW)			
		< VIBRATOR >			
X101	1-577-576-21	VIBRATOR, CRYSTAL(16.93MHz)			
**********					
	A-4475-079-A	CASSETTE BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C301	1-163-006-11	CERAMIC CHIP	560PF	10.00%	50V
C302	1-163-006-11	CERAMIC CHIP	560PF	10.00%	50V
C303	1-163-006-11	CERAMIC CHIP	560PF	10.00%	50V
C304	1-163-006-11	CERAMIC CHIP	560PF	10.00%	50V
C305	1-130-486-00	MYLAR	0.018uF	10%	50V
C306	1-130-486-00	MYLAR	0.018uF	10%	50V
C307	1-104-664-11	ELECT	47uF	20.00%	10V
C308	1-104-664-11	ELECT	47uF	20.00%	10V
C309	1-126-962-11	ELECT	3.3uF	20.00%	50V
C310	1-126-962-11	ELECT	3.3uF	20.00%	50V
C323	1-126-963-11	ELECT	4.7uF	20.00%	50V
C324	1-126-963-11	ELECT	4.7uF	20.00%	50V
C325	1-126-960-11	ELECT	1uF	20.00%	50V
C326	1-126-960-11	ELECT	1uF	20.00%	50V
C327	1-130-470-00	MYLAR	820PF	5%	50V
C328	1-130-470-00	MYLAR	820PF	5%	50V
C329	1-137-427-91		120PF	5%	50V
C330	1-137-427-91		120PF	5%	50V
C331	1-126-962-11	ELECT	3.3uF	20.00%	50V
C332	1-126-962-11	ELECT	3.3uF	20.00%	50V
C333	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C334	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C335	1-130-479-00	MYLAR	0.0047uF	5%	50V
C336	1-130-479-00	MYLAR	0.0047uF	5%	50V
C341	1-130-481-00	MYLAR	0.0068uF	5%	50V
C342	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C343	1-126-964-11	ELECT	10uF	20.00%	50V
C345	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V

CASSETTE | CD DOOR | CD LED

Ref. No.	Part No.	Description			Remarks
C346	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C347	1-130-479-00	MYLAR	0.0047uF	5%	50V
C348	1-136-293-11	MYLAR	0.0082uF	5.00%	50V
C362	1-104-664-11	ELECT	47uF	20.00%	16V
C365	1-104-664-11	ELECT	47uF	20.00%	16V
C366	1-126-961-11	ELECT	2.2uF	20.00%	50V
C371	1-104-665-11	ELECT	100uF	20.00%	10V
C372	1-163-021-91	CERAMIC CHIP	0.01uF	10.00%	50V
C373	1-126-934-11	ELECT	220uF	20.00%	16V
C391	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C392	1-163-239-11	CERAMIC CHIP	33PF	5.00%	50V
C393	1-163-012-00	CERAMIC CHIP	0.0018uF	10.00%	50V
C394	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C395	1-126-960-11	ELECT	1uF	20.00%	50V
		< DIODE >			
D361	8-719-911-19	DIODE 1SS133T-72			
D391	8-719-911-19	DIODE 1SS133T-72			
		< IC >			
IC301	8-759-242-58	IC TA8189N			
IC361	8-759-143-54	IC uPC1330HA			
		< COIL >			
L301	1-410-780-11	INDUCTOR 27mH			
L302	1-410-780-11	INDUCTOR 27mH			
		< TRANSISTOR >			
Q301	8-729-029-66	TRANSISTOR DTC114ESA-TP			
Q303	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q304	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q331	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q332	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q341	8-729-142-46	TRANSISTOR 2SC2001TP-L			
Q351	8-729-026-39	TRANSISTOR 2SA933AS-QRT			
Q352	8-729-029-66	TRANSISTOR DTC114ESA-TP			
Q391	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q392	8-729-119-78	TRANSISTOR 2SC2785TP-HFE			
		< RESISTOR >			
R301	1-216-049-91	RES-CHIP	1K	5%	1/10W
R302	1-216-049-91	RES-CHIP	1K	5%	1/10W
R303	1-216-049-91	RES-CHIP	1K	5%	1/10W
R304	1-216-049-91	RES-CHIP	1K	5%	1/10W
R305	1-216-019-00	METAL CHIP	56	5%	1/10W
R306	1-216-019-00	METAL CHIP	56	5%	1/10W
R307	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R308	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R309	1-216-103-00	METAL CHIP	180K	5%	1/10W
R310	1-216-103-00	METAL CHIP	180K	5%	1/10W
R311	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R312	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W
R314	1-216-073-00	METAL CHIP	10K	5%	1/10W
R321	1-216-089-91	RES-CHIP	47K	5%	1/10W
R322	1-216-089-91	RES-CHIP	47K	5%	1/10W
R323	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R324	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R325	1-216-103-00	METAL CHIP	180K	5%	1/10W
R326	1-216-103-00	METAL CHIP	180K	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R327	1-216-077-91	RES-CHIP	15K	5%	1/10W
R328	1-216-077-91	RES-CHIP	15K	5%	1/10W
R331	1-216-073-00	METAL CHIP	10K	5%	1/10W
R332	1-216-073-00	METAL CHIP	10K	5%	1/10W
R333	1-216-073-00	METAL CHIP	10K	5%	1/10W
R334	1-216-073-00	METAL CHIP	10K	5%	1/10W
R335	1-216-097-91	RES-CHIP	100K	5%	1/10W
R336	1-216-097-91	RES-CHIP	100K	5%	1/10W
R337	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R338	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R339	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R340	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R341	1-216-017-91	RES-CHIP	47	5%	1/10W
R342	1-216-073-00	METAL CHIP	10K	5%	1/10W
R343	1-216-001-00	METAL CHIP	10	5%	1/10W
R344	1-216-013-00	METAL CHIP	33	5%	1/10W
R345	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R346	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R347	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R351	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R352	1-216-089-91	RES-CHIP	47K	5%	1/10W
R361	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R363	1-216-025-91	RES-CHIP	100	5%	1/10W
R365	1-216-121-91	RES-CHIP	1M	5%	1/10W
R371	1-216-001-00	METAL CHIP	10	5%	1/10W
R373	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W
R392	1-216-121-91	RES-CHIP	1M	5%	1/10W
R393	1-216-089-91	RES-CHIP	47K	5%	1/10W
R394	1-216-009-91	RES-CHIP	22	5%	1/10W
R395	1-216-097-91	RES-CHIP	100K	5%	1/10W
		< TRANSFORMER >			
T341	1-433-372-11	TRANSFORMER, BIAS OSCILLATION			
		< VARIABLE RESISTOR >			
VR301	1-238-599-11	RES, ADJ, CARBON 4.7K			

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	1-677-243-11	CD DOOR BOARD			
		**********			
		< SWITCH >			
S413	1-762-386-11	SWITCH, PUSH(CD DOOR)			

****

	1-677-236-11	CD LED BOARD			
		**********			
		< CONNECTOR >			
CN604A	1-506-481-11	PIN, CONNECTOR 2P			
		< DIODE >			
D691	8-719-058-04	DIODE SEL5223S-TP15(CD LIGHT)			
D692	8-719-058-03	DIODE SEL5423E-TP15(CD LIGHT)			
D693	8-719-058-64	DIODE SEL5823A-TP15(CD LIGHT)			
D694	8-719-058-64	DIODE SEL5823A-TP15(CD LIGHT)			

Ref. No.	Part No.	Description				Remarks
		< RESISTOR >				
R691	1-249-402-11	CARBON	56	5%	1/4W	F
R692	1-249-402-11	CARBON	56	5%	1/4W	F
**********						
*	1-663-974-11	CD MOTOR BOARD				
		**********				
		< CONNECTOR >				
CN61	1-506-469-11	PIN, CONNECTOR 4P				
**********						
*	1-663-972-11	DISC SENSOR (R) BOARD				
		**********				
*	4-990-669-01	HOLDER (SENSOR)				
	7-685-132-19	SCREW +BTP	2.6X5	TYPE2 N-S		
		< TRANSISTOR >				
Q51	8-729-926-31	PHOTO TRAN	ISTOR PT483F1			
**********						
*	1-663-973-11	DISC SENSOR (S) BOARD				
		**********				
*	4-976-473-01	HOLDER (LED-S)				
		< CONNECTOR >				
* CN53	1-568-951-11	PIN, CONNECTOR 2P				
		< DIODE >				
D51	8-719-055-84	DIODE GL528VS1				
		< RESISTOR >				
R54	1-249-409-11	CARBON	220	5%	1/4W	F
**********						
	1-677-237-11	DOOR LED BOARD				
		**********				
		< CONNECTOR >				
CN605A	1-506-481-11	PIN, CONNECTOR 2P				
		< DIODE >				
D697	8-719-080-87	DIODE L-934SYTK(CD DOOR)				
		< RESISTOR >				
R694	1-249-407-11	CARBON	150	5%	1/4W	F
**********						
	A-4475-078-A	FRONT AMP BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C701	1-104-665-11	ELECT	100uF	20.00%	10V	
C702	1-126-961-11	ELECT	2.2uF	20.00%	50V	
C703	1-126-963-11	ELECT	4.7uF	20.00%	50V	
C704	1-126-933-11	ELECT	100uF	20.00%	16V	
C731	1-126-961-11	ELECT	2.2uF	20.00%	50V	
C741	1-104-665-11	ELECT	100uF	20.00%	10V	

Ref. No.	Part No.	Description			Remarks
C801	1-128-582-11	ELECT	10uF	20.00%	100V
C802	1-128-582-11	ELECT	10uF	20.00%	100V
C803	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C804	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C805	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C806	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C807	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C808	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C809	1-126-967-11	ELECT	47uF	20.00%	50V
C810	1-126-967-11	ELECT	47uF	20.00%	50V
C811	1-136-167-00	MYLAR	0.15uF	5.00%	50V
C812	1-136-167-00	MYLAR	0.15uF	5.00%	50V
C813	1-136-167-00	MYLAR	0.15uF	5.00%	50V
C814	1-136-167-00	MYLAR	0.15uF	5.00%	50V
C815	1-128-576-11	ELECT	100uF	20.00%	63V
C816	1-128-576-11	ELECT	100uF	20.00%	63V
C817	1-126-964-11	ELECT	10uF	20.00%	50V
C818	1-126-964-11	ELECT	10uF	20.00%	50V
C951	1-106-220-00	MYLAR	0.1uF	5%	100V
C952	1-106-220-00	MYLAR	0.1uF	5%	100V
C953	1-126-974-11	ELECT	3300uF	20.00%	50V
C954	1-126-974-11	ELECT	3300uF	20.00%	50V
		< CONNECTOR >			
CN301	1-568-855-11	SOCKET, CONNECTOR 12P			
CN804	1-506-469-11	PIN, CONNECTOR 4P			
		< DIODE >			
D731	8-719-988-61	DIODE 1SS355TE-17			
D732	8-719-988-61	DIODE 1SS355TE-17			
D733	8-719-988-61	DIODE 1SS355TE-17			
D751	8-719-988-61	DIODE 1SS355TE-17			
D752	8-719-988-61	DIODE 1SS355TE-17			
D801	8-719-988-61	DIODE 1SS355TE-17			
D802	8-719-988-61	DIODE 1SS355TE-17			
D803	8-719-988-61	DIODE 1SS355TE-17			
D951	8-719-080-80	DIODE TS6B03G			
		< IC >			
IC801	8-749-017-96	IC STK402-100			
		< TRANSISTOR >			
Q701	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q702	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q703	8-729-026-39	TRANSISTOR 2SA933AS-QRT			
Q711	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q712	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q721	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q731	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q732	8-729-026-39	TRANSISTOR 2SA933AS-QRT			
Q733	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q741	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q742	8-729-140-04	TRANSISTOR 2SB1116-TP-LK			
Q743	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q801	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q802	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
		< RESISTOR >			
R701	1-216-081-00	METAL CHIP	22K	5%	1/10W

FRONT AMP | FRONT SP TERM | MAIN

Ref. No.	Part No.	Description			Remarks
R702	1-216-089-91	RES-CHIP	47K	5%	1/10W
R704	1-216-089-91	RES-CHIP	47K	5%	1/10W
R705	1-216-073-00	METAL CHIP	10K	5%	1/10W
R706	1-216-089-91	RES-CHIP	47K	5%	1/10W
R707	1-216-073-00	METAL CHIP	10K	5%	1/10W
R708	1-216-033-00	METAL CHIP	220	5%	1/10W
R711	1-216-081-00	METAL CHIP	22K	5%	1/10W
R712	1-216-097-91	RES-CHIP	100K	5%	1/10W
R721	1-216-081-00	METAL CHIP	22K	5%	1/10W
R731	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R732	1-216-081-00	METAL CHIP	22K	5%	1/10W
R733	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R734	1-216-081-00	METAL CHIP	22K	5%	1/10W
R735	1-216-089-91	RES-CHIP	47K	5%	1/10W
R736	1-215-892-11	METAL OXIDE	1K	5%	2W
R737	1-216-073-00	METAL CHIP	10K	5%	1/10W
R738	1-216-073-00	METAL CHIP	10K	5%	1/10W
R741	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R742	1-216-085-00	METAL CHIP	33K	5%	1/10W
R743	1-216-073-00	METAL CHIP	10K	5%	1/10W
R744	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R745	1-216-081-00	METAL CHIP	22K	5%	1/10W
R746	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R747	1-216-049-91	RES-CHIP	1K	5%	1/10W
R751	1-216-089-91	RES-CHIP	47K	5%	1/10W
R752	1-216-089-91	RES-CHIP	47K	5%	1/10W
R761	1-216-091-00	METAL CHIP	56K	5%	1/10W
R762	1-216-081-00	METAL CHIP	22K	5%	1/10W
R801	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R802	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R803	1-216-089-91	RES-CHIP	47K	5%	1/10W
R804	1-216-089-91	RES-CHIP	47K	5%	1/10W
R805	1-216-089-91	RES-CHIP	47K	5%	1/10W
R806	1-216-089-91	RES-CHIP	47K	5%	1/10W
R807	1-216-049-91	RES-CHIP	1K	5%	1/10W
R808	1-216-049-91	RES-CHIP	1K	5%	1/10W
R809	1-216-049-91	RES-CHIP	1K	5%	1/10W
R810	1-216-049-91	RES-CHIP	1K	5%	1/10W
R811	1-216-077-91	RES-CHIP	15K	5%	1/10W
R812	1-216-077-91	RES-CHIP	15K	5%	1/10W
R813	1-220-893-11	METAL	0.22	10%	5W
R814	1-220-893-11	METAL	0.22	10%	5W
R815	1-216-097-91	RES-CHIP	100K	5%	1/10W
R816	1-216-097-91	RES-CHIP	100K	5%	1/10W
R817	1-260-075-81	CARBON	8.2	5%	1/2W
R818	1-260-075-81	CARBON	8.2	5%	1/2W
R819	1-249-427-11	CARBON	6.8K	5%	1/4W F
⚠R829	1-212-881-11	FUSIBLE	100	5%	1/4W
⚠R830	1-212-881-11	FUSIBLE	100	5%	1/4W
R831	1-260-316-51	CARBON	100	5%	1/2W
R832	1-260-316-51	CARBON	100	5%	1/2W
R833	1-260-316-51	CARBON	100	5%	1/2W
R834	1-260-316-51	CARBON	100	5%	1/2W
R835	1-260-316-51	CARBON	100	5%	1/2W
R836	1-260-316-51	CARBON	100	5%	1/2W
R837	1-220-893-11	METAL	0.22	10%	5W
R838	1-220-893-11	METAL	0.22	10%	5W

Ref. No.	Part No.	Description			
		< RELAY >			
RY731	1-515-920-11	RELAY (24V)			
		< THERMISTOR >			
TH711	1-807-796-11	THERMISTOR			
**********					
	1-677-246-11	FRONT SP TERM BOARD			
		**********			
		< CONNECTOR >			
* CN802	1-564-507-11	PLUG, CONNECTOR 4P			
		< TERMINAL BOARD >			
JK801	1-694-730-11	TERMINAL BOARD (4P)(FRONT SPEAKER)			
		< COIL >			
L701	1-419-686-11	COIL, AIR-CORE			
L702	1-419-686-11	COIL, AIR-CORE			
		< RESISTOR >			
R821	1-249-397-11	CARBON	22	5%	1/4W F
R822	1-249-397-11	CARBON	22	5%	1/4W F
R823	1-249-397-11	CARBON	22	5%	1/4W F
R824	1-249-397-11	CARBON	22	5%	1/4W F
**********					
	A-4475-215-A	MAIN BOARD, COMPLETE			
		**********			
	3-376-464-11	SCREW(+PTT 2.6X6),GROUND POINT			
	3-911-116-42	RIVET, PUSH			
	7-685-646-79	SCREW +BVTP	3X8	TYPE2 N-S	
		< TERMINAL BOARD >			
ANT1	1-694-731-11	TERMINAL BOARD (4P)			
		< CAPACITOR >			
C1	1-161-494-00	CERAMIC	0.022uF		25V
C2	1-104-664-11	ELECT	47uF	20.00%	16V
C3	1-164-159-11	CERAMIC	0.1uF		50V
C4	1-161-494-00	CERAMIC	0.022uF		25V
C5	1-161-494-00	CERAMIC	0.022uF		25V
C6	1-161-494-00	CERAMIC	0.022uF		25V
C7	1-162-847-11	CERAMIC	0.047uF	10.00%	16V
C8	1-162-847-11	CERAMIC	0.047uF	10.00%	16V
C9	1-104-664-11	ELECT	47uF	20.00%	16V
C10	1-164-159-11	CERAMIC	0.1uF		50V
C11	1-164-159-11	CERAMIC	0.1uF		50V
C23	1-162-600-11	CERAMIC	0.0047uF	30.00%	16V
C24	1-162-199-31	CERAMIC	10PF	5%	50V
C25	1-162-847-11	CERAMIC	0.047uF	10.00%	16V
C26	1-162-294-31	CERAMIC	0.001uF	10%	50V
C28	1-126-965-11	ELECT	22uF	20.00%	50V
C29	1-162-847-11	CERAMIC	0.047uF	10.00%	16V
C30	1-162-847-11	CERAMIC	0.047uF	10.00%	16V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
C31	1-126-964-11	ELECT	10uF	20.00%	50V
C32	1-126-963-11	ELECT	4.7uF	20.00%	50V
C33	1-162-294-31	CERAMIC	0.001uF	10%	50V
C34	1-162-851-11	CERAMIC	0.1uF		16V
C35	1-161-057-00	CERAMIC	0.033uF	10%	50V
C36	1-161-057-00	CERAMIC	0.033uF	10%	50V
C37	1-162-835-11	CERAMIC	0.0047uF	10.00%	16V
C41	1-162-834-11	CERAMIC	0.0039uF	10.00%	16V
C42	1-162-834-11	CERAMIC	0.0039uF	10.00%	16V
C54	1-126-960-11	ELECT	1uF	20.00%	50V
C55	1-126-959-11	ELECT	0.47uF	20.00%	50V
C56	1-126-960-11	ELECT	1uF	20.00%	50V
C57	1-162-847-11	CERAMIC	0.047uF	10.00%	16V
C58	1-104-664-11	ELECT	47uF	20.00%	16V
C59	1-162-847-11	CERAMIC	0.047uF	10.00%	16V
C60	1-162-306-11	CERAMIC	0.01uF	20.00%	16V
C61	1-161-494-00	CERAMIC	0.022uF		25V
C62	1-161-494-00	CERAMIC	0.022uF		25V
C71	1-126-961-11	ELECT	2.2uF	20.00%	50V
C72	1-162-201-31	CERAMIC	12PF	5%	50V
C73	1-162-201-31	CERAMIC	12PF	5%	50V
C74	1-162-207-31	CERAMIC	22PF	5%	50V
C75	1-162-294-31	CERAMIC	0.001uF	10%	50V
C77	1-104-664-11	ELECT	47uF	20.00%	16V
C78	1-161-494-00	CERAMIC	0.022uF		25V
C79	1-162-306-11	CERAMIC	0.01uF	20.00%	16V
C80	1-104-664-11	ELECT	47uF	20.00%	16V
C81	1-162-306-11	CERAMIC	0.01uF	20.00%	16V
C82	1-162-306-11	CERAMIC	0.01uF	20.00%	16V
C85	1-104-665-11	ELECT	100uF	20.00%	10V
C101	1-126-960-11	ELECT	1uF	20.00%	50V
C102	1-126-960-11	ELECT	1uF	20.00%	50V
C103	1-126-960-11	ELECT	1uF	20.00%	50V
C104	1-126-960-11	ELECT	1uF	20.00%	50V
C105	1-126-960-11	ELECT	1uF	20.00%	50V
C106	1-126-960-11	ELECT	1uF	20.00%	50V
C107	1-126-960-11	ELECT	1uF	20.00%	50V
C108	1-126-960-11	ELECT	1uF	20.00%	50V
C109	1-126-961-11	ELECT	2.2uF	20.00%	50V
C110	1-126-961-11	ELECT	2.2uF	20.00%	50V
C111	1-130-495-00	MYLAR	0.1uF	5%	50V
C112	1-130-495-00	MYLAR	0.1uF	5%	50V
C113	1-130-495-00	MYLAR	0.1uF	5%	50V
C114	1-130-495-00	MYLAR	0.1uF	5%	50V
C115	1-130-480-00	MYLAR	0.0056uF	5%	50V
C116	1-130-480-00	MYLAR	0.0056uF	5%	50V
C119	1-128-551-11	ELECT	22uF	20.00%	25V
C120	1-126-933-11	ELECT	100uF	20.00%	16V
C131	1-126-963-11	ELECT	4.7uF	20.00%	50V
C132	1-126-963-11	ELECT	4.7uF	20.00%	50V
C141	1-130-495-00	MYLAR	0.1uF	5%	50V
C142	1-130-495-00	MYLAR	0.1uF	5%	50V
C143	1-130-495-00	MYLAR	0.1uF	5%	50V
C144	1-130-495-00	MYLAR	0.1uF	5%	50V
C145	1-104-665-11	ELECT	100uF	20.00%	10V
C146	1-104-665-11	ELECT	100uF	20.00%	10V
C147	1-162-286-31	CERAMIC	220PF	10%	50V
C148	1-162-286-31	CERAMIC	220PF	10%	50V
C149	1-126-961-11	ELECT	2.2uF	20.00%	50V

Ref. No.	Part No.	Description			Remarks
C150	1-126-961-11	ELECT	2.2uF	20.00%	50V
C156	1-126-934-11	ELECT	220uF	20.00%	10V
C157	1-126-933-11	ELECT	100uF	20.00%	16V
C165	1-162-286-31	CERAMIC	220PF	10%	50V
C169	1-126-934-11	ELECT	220uF	20.00%	16V
C171	1-126-963-11	ELECT	4.7uF	20.00%	50V
C172	1-126-934-11	ELECT	220uF	20.00%	16V
C176	1-126-959-11	ELECT	0.47uF	20.00%	50V
C181	1-126-963-11	ELECT	4.7uF	20.00%	50V
C182	1-126-963-11	ELECT	4.7uF	20.00%	50V
C183	1-126-961-11	ELECT	2.2uF	20.00%	50V
C184	1-126-961-11	ELECT	2.2uF	20.00%	50V
C191	1-126-933-11	ELECT	100uF	20.00%	16V
C192	1-126-933-11	ELECT	100uF	20.00%	16V
C201	1-126-961-11	ELECT	2.2uF	20.00%	50V
C202	1-126-961-11	ELECT	2.2uF	20.00%	50V
C203	1-126-961-11	ELECT	2.2uF	20.00%	50V
C204	1-126-961-11	ELECT	2.2uF	20.00%	50V
C205	1-126-961-11	ELECT	2.2uF	20.00%	50V
C205	1-126-964-11	ELECT	10uF	20.00%	50V
C207	1-126-964-11	ELECT	10uF	20.00%	50V
C208	1-126-964-11	ELECT	10uF	20.00%	50V
C209	1-126-961-11	ELECT	2.2uF	20.00%	50V
C211	1-126-964-11	ELECT	10uF	20.00%	50V
C212	1-126-964-11	ELECT	10uF	20.00%	50V
C213	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C214	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C215	1-126-964-11	ELECT	10uF	20.00%	50V
C216	1-126-964-11	ELECT	10uF	20.00%	50V
C217	1-126-964-11	ELECT	10uF	20.00%	50V
C218	1-126-964-11	ELECT	10uF	20.00%	50V
C219	1-126-964-11	ELECT	10uF	20.00%	50V
C220	1-126-964-11	ELECT	10uF	20.00%	50V
C221	1-130-480-00	MYLAR	0.0056uF	5%	50V
C222	1-136-161-00	MYLAR	0.047uF	5.00%	50V
C223	1-136-175-00	MYLAR	0.68uF	5.00%	50V
C224	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C225	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C226	1-126-963-11	ELECT	4.7uF	20.00%	50V
C227	1-126-963-11	ELECT	4.7uF	20.00%	50V
C228	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C229	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C230	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C231	1-136-161-00	MYLAR	0.047uF	5.00%	50V
C232	1-136-161-00	MYLAR	0.047uF	5.00%	50V
C233	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C234	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C235	1-136-157-00	MYLAR	0.022uF	5.00%	50V
C236	1-136-157-00	MYLAR	0.022uF	5.00%	50V
C237	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C238	1-162-292-31	CERAMIC	680PF	10%	50V
C239	1-136-153-00	FILM	0.01uF	5%	50V
C240	1-136-153-00	FILM	0.01uF	5%	50V
C241	1-162-292-31	CERAMIC	680PF	10%	50V
C242	1-136-153-00	FILM	0.01uF	5%	50V
C243	1-136-153-00	FILM	0.01uF	5%	50V
C244	1-126-963-11	ELECT	4.7uF	20.00%	50V
C245	1-162-305-11	CERAMIC	0.0068uF	30.00%	16V
C246	1-126-967-11	ELECT	47uF	20.00%	50V

MAIN

Ref. No.	Part No.	Description			Remarks
C251	1-126-964-11	ELECT	10uF	20.00%	50V
C252	1-162-282-31	CERAMIC	100PF	10%	50V
C253	1-126-964-11	ELECT	10uF	20.00%	50V
C254	1-126-963-11	ELECT	4.7uF	20.00%	50V
C255	1-126-961-11	ELECT	2.2uF	20.00%	50V
C256	1-162-851-11	CERAMIC	0.1uF		16V
C257	1-162-851-11	CERAMIC	0.1uF		16V
C258	1-162-851-11	CERAMIC	0.1uF		16V
C259	1-162-851-11	CERAMIC	0.1uF		16V
C261	1-126-960-11	ELECT	1uF	20.00%	50V
C262	1-130-479-00	MYLAR	0.0047uF	5%	50V
C263	1-130-471-00	MYLAR	0.001uF	5%	50V
C264	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C265	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C266	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C267	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C268	1-130-479-00	MYLAR	0.0047uF	5%	50V
C269	1-130-471-00	MYLAR	0.001uF	5%	50V
C270	1-126-960-11	ELECT	1uF	20.00%	50V
C272	1-162-294-31	CERAMIC	0.001uF	10%	50V
C273	1-162-294-31	CERAMIC	0.001uF	10%	50V
C281	1-104-665-11	ELECT	100uF	20.00%	10V
C282	1-126-934-11	ELECT	220uF	20.00%	10V
C283	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C284	1-104-665-11	ELECT	100uF	20.00%	10V
C285	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C375	1-162-600-11	CERAMIC	0.0047uF	30.00%	16V
C377	1-162-600-11	CERAMIC	0.0047uF	30.00%	16V
C381	1-162-600-11	CERAMIC	0.0047uF	30.00%	16V
C397	1-164-159-11	CERAMIC	0.1uF		50V
C398	1-164-159-11	CERAMIC	0.1uF		50V
C401	1-104-665-11	ELECT	100uF	20.00%	10V
C402	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C403	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C405	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C406	1-104-665-11	ELECT	100uF	20.00%	10V
C410	1-104-665-11	ELECT	100uF	20.00%	10V
C411	1-110-489-11	CAPACITOR	1uF		5.5V
C412	1-164-159-11	CERAMIC	0.1uF		50V
C413	1-162-294-31	CERAMIC	0.001uF	10%	50V
C451	1-126-934-11	ELECT	220uF	20.00%	16V
C453	1-164-159-11	CERAMIC	0.1uF		50V
C456	1-164-159-11	CERAMIC	0.1uF		50V
C457	1-164-159-11	CERAMIC	0.1uF		50V
C458	1-164-159-11	CERAMIC	0.1uF		50V
C460	1-164-159-11	CERAMIC	0.1uF		50V
C461	1-126-964-11	ELECT	10uF	20.00%	50V
C462	1-162-294-31	CERAMIC	0.001uF	10%	50V
C463	1-162-294-31	CERAMIC	0.001uF	10%	50V
C465	1-126-964-11	ELECT	10uF	20.00%	50V
C471	1-130-480-00	MYLAR	0.0056uF	5%	50V
C472	1-130-480-00	MYLAR	0.0056uF	5%	50V
C473	1-130-473-00	MYLAR	0.0015uF	5%	50V
C474	1-130-473-00	MYLAR	0.0015uF	5%	50V
C475	1-162-282-31	CERAMIC	100PF	10%	50V
C476	1-162-282-31	CERAMIC	100PF	10%	50V
C477	1-126-963-11	ELECT	4.7uF	20.00%	50V
C478	1-126-963-11	ELECT	4.7uF	20.00%	50V
C479	1-126-934-11	ELECT	220uF	20.00%	16V

Ref. No.	Part No.	Description			Remarks
C481	1-126-963-11	ELECT	4.7uF	20.00%	50V
C482	1-126-963-11	ELECT	4.7uF	20.00%	50V
C501	1-104-664-11	ELECT	47uF	20.00%	10V
C502	1-164-159-11	CERAMIC	0.1uF		50V
C511	1-162-215-31	CERAMIC	47PF	5%	50V
C512	1-162-215-31	CERAMIC	47PF	5%	50V
C521	1-126-964-11	ELECT	10uF	20.00%	50V
C541	1-164-159-11	CERAMIC	0.1uF		50V
C542	1-126-767-11	ELECT	1000uF	20.00%	16V
C543	1-164-159-11	CERAMIC	0.1uF		50V
C545	1-164-159-11	CERAMIC	0.1uF		50V
C751	1-126-963-11	ELECT	4.7uF	20.00%	50V
C752	1-104-665-11	ELECT	100uF	20.00%	10V
C901	1-164-159-11	CERAMIC	0.1uF		50V
C902	1-164-159-11	CERAMIC	0.1uF		50V
C903	1-164-159-11	CERAMIC	0.1uF		50V
C904	1-164-159-11	CERAMIC	0.1uF		50V
C905	1-126-943-11	ELECT	2200uF	20.00%	25V
C906	1-162-286-31	CERAMIC	220PF	10%	50V
C907	1-126-964-11	ELECT	10uF	20.00%	50V
C908	1-126-964-11	ELECT	10uF	20.00%	50V
C909	1-104-661-91	ELECT	330uF	20.00%	16V
C921	1-126-964-11	ELECT	10uF	20.00%	50V
C922	1-126-767-11	ELECT	1000uF	20.00%	16V
C923	1-126-933-11	ELECT	100uF	20.00%	16V
C924	1-126-964-11	ELECT	10uF	20.00%	50V
C925	1-126-933-11	ELECT	100uF	20.00%	16V
C940	1-126-964-11	ELECT	10uF	20.00%	50V
C941	1-126-967-11	ELECT	47uF	20.00%	50V
C971	1-104-665-11	ELECT	100uF	20.00%	25V
C972	1-126-934-11	ELECT	220uF	20.00%	16V
C973	1-126-933-11	ELECT	100uF	20.00%	16V
C974	1-126-767-11	ELECT	1000uF	20.00%	16V

< FILTER >

CD51	1-760-127-11	FILTER, CERAMIC
CF1	1-760-127-11	FILTER, CERAMIC
CF2	1-760-127-11	FILTER, CERAMIC

< CONNECTOR >

CN401	1-568-859-11	SOCKET, CONNECTOR 16P
CN402	1-784-731-41	CONNECTOR, FFC 9P
* CN403	1-568-951-11	PIN, CONNECTOR 2P
CN405	1-506-468-11	PIN, CONNECTOR 3P
* CN451	1-568-955-11	PIN, CONNECTOR 6P
* CN453	1-568-951-11	PIN, CONNECTOR 2P
CN454	1-506-468-11	PIN, CONNECTOR 3P
CN461	1-506-469-11	PIN, CONNECTOR 4P
* CN751	1-564-506-11	PLUG, CONNECTOR 3P
CN301B	1-784-773-41	CONNECTOR, FFC 12P
* CN601B	1-695-371-31	CONNECTOR, FFC 10P
* CN801B	1-568-937-11	PIN, CONNECTOR 10P
* CN841B	1-568-934-11	PIN, CONNECTOR 7P
* CN1001	1-568-836-11	SOCKET, CONNECTOR 17P

< DIODE >

D51	8-719-911-19	DIODE 1SS133T-72
D52	8-719-911-19	DIODE 1SS133T-72
D85	8-719-109-89	DIODE MTZJ-T-72-5.6B

Ref. No.	Part No.	Description	Remarks
D141	8-719-921-40	DIODE MTZJ-T-72-4.7C	
D142	8-719-911-19	DIODE 1SS133T-72	
D143	8-719-911-19	DIODE 1SS133T-72	
D172	8-719-911-19	DIODE 1SS133T-72	
D176	8-719-911-19	DIODE 1SS133T-72	
D197	8-719-911-19	DIODE 1SS133T-72	
D198	8-719-911-19	DIODE 1SS133T-72	
D401	8-719-024-99	DIODE 11ES2-NTA2B	
D402	8-719-911-19	DIODE 1SS133T-72	
D411	8-719-911-19	DIODE 1SS133T-72	
D501	8-719-911-19	DIODE 1SS133T-72	
D502	8-719-911-19	DIODE 1SS133T-72	
D503	8-719-911-19	DIODE 1SS133T-72	
D541	8-719-024-99	DIODE 11ES2-NTA2B	
D542	8-719-024-99	DIODE 11ES2-NTA2B	
D753	8-719-024-99	DIODE 11ES2-NTA2B	
D754	8-719-024-99	DIODE 11ES2-NTA2B	
D901	8-719-024-99	DIODE 11ES2-NTA2B	
D902	8-719-024-99	DIODE 11ES2-NTA2B	
D903	8-719-024-99	DIODE 11ES2-NTA2B	
D904	8-719-024-99	DIODE 11ES2-NTA2B	
D905	8-719-110-09	DIODE MTZJ-T-77-8.2C	
D936	8-719-934-25	DIODE HZS33-1LTA	
D937	8-719-921-44	DIODE MTZJ-T-72-5.1C	
D971	8-719-921-89	DIODE MTZJ-T-77-13C	
D972	8-719-024-99	DIODE 11ES2-NTA2B	
		< FERRITE BEAD >	
FB401	1-412-473-21	INDUCTOR 0UH	
FB402	1-412-473-21	INDUCTOR 0UH	
FB404	1-412-473-21	INDUCTOR 0UH	
FB405	1-412-473-21	INDUCTOR 0UH	
FB406	1-412-473-21	INDUCTOR 0UH	
FB407	1-412-473-21	INDUCTOR 0UH	
FB408	1-412-473-21	INDUCTOR 0UH	
FB409	1-412-473-21	INDUCTOR 0UH	
		< FRONT END >	
FE1	1-693-457-11	TUNER	
		< IC >	
IC1	8-759-663-31	IC LA1833N	
IC2	8-759-684-31	IC LC72136	
IC101	8-759-684-33	IC TDA7440D	
IC141	8-759-989-89	IC BA4558N	
IC181	8-759-000-49	IC TC4066BPHB	
IC201	8-759-571-51	IC M62464FP	
IC251	8-759-989-89	IC BA4558N	
IC401	8-752-914-95	IC CXP84632-158Q	
IC402	8-749-923-04	IC TOTX178A	
IC411	8-759-684-32	IC W24258/LL	
IC461	8-759-356-03	IC BA6780	
IC501	8-752-914-96	IC CXP84632-159Q	
IC502	8-759-635-63	IC M51943BSL-TP	
IC921	8-759-604-35	IC M5F78M05L	
IC922	8-749-011-78	IC BA17807T	

Ref. No.	Part No.	Description	Remarks
		< JACK >	
J101	1-794-634-11	JACK, PIN 2P	
J103	1-794-635-11	JACK, PIN 1P	
J201	1-794-636-11	JACK, PIN 6P(DVD INPUT(FRONT/REAR/CENTER/WOOFER))	
		< COIL >	
L401	1-410-509-11	INDUCTOR 10uH	
L402	1-410-509-11	INDUCTOR 10uH	
L457	1-410-509-11	INDUCTOR 10uH	
L501	1-410-509-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q1	8-729-922-67	TRANSISTOR 2SC2410S-TPN	
Q2	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q3	8-729-029-55	TRANSISTOR DTA143ZSA-TP	
Q131	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q141	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q142	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q143	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q144	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q145	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q146	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q161	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q162	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q171	8-729-422-57	TRANSISTOR DTA114ES-TP	
Q172	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q195	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q196	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q197	8-729-422-57	TRANSISTOR DTA114ES-TP	
Q263	8-729-422-57	TRANSISTOR DTA114ES-TP	
Q264	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q294	8-729-422-57	TRANSISTOR DTA114ES-TP	
Q295	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q375	8-729-116-59	TRANSISTOR 2SB1068TP	
Q376	8-729-116-59	TRANSISTOR 2SB1068TP	
Q377	8-729-900-80	TRANSISTOR BA1A4M-TP	
Q378	8-729-900-80	TRANSISTOR BA1A4M-TP	
Q381	8-729-116-59	TRANSISTOR 2SB1068TP	
Q382	8-729-900-80	TRANSISTOR BA1A4M-TP	
Q411	8-729-900-36	TRANSISTOR BA1F4M-TP	
Q461	8-729-029-21	TRANSISTOR DTA114ESA-TP	
Q462	8-729-029-21	TRANSISTOR DTA114ESA-TP	
Q463	8-729-029-21	TRANSISTOR DTA114ESA-TP	
Q464	8-729-029-21	TRANSISTOR DTA114ESA-TP	
Q465	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q466	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q467	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q468	8-729-029-66	TRANSISTOR DTC114ESA-TP	
Q471	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q472	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q751	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q752	8-729-140-04	TRANSISTOR 2SB1116-TP-LK	
Q901	8-729-141-83	TRANSISTOR 2SB1375	
Q902	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q903	8-729-119-78	TRANSISTOR 2SC1740S-QRT	
Q904	8-729-026-39	TRANSISTOR 2SA933AS-QRT	
Q921	8-729-040-20	TRANSISTOR RT1P137L-TP	

MAIN

Ref. No.	Part No.	Description			Remarks
Q922	8-729-620-05	TRANSISTOR 2SC2603TP-EF			
Q931	8-729-993-43	TRANSISTOR 2SA934R			
Q971	8-729-209-15	TRANSISTOR 2SD2012			
Q972	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
		< RESISTOR >			
R1	1-249-397-11	CARBON	22	5%	1/4W F
R2	1-249-417-11	CARBON	1K	5%	1/4W F
R5	1-249-411-11	CARBON	330	5%	1/4W
R7	1-249-417-11	CARBON	1K	5%	1/4W F
R8	1-247-887-00	CARBON	220K	5%	1/4W
R9	1-249-411-11	CARBON	330	5%	1/4W
R10	1-249-417-11	CARBON	1K	5%	1/4W F
R21	1-249-441-11	CARBON	100K	5%	1/4W
R22	1-249-441-11	CARBON	100K	5%	1/4W
R23	1-249-417-11	CARBON	1K	5%	1/4W F
R24	1-249-427-11	CARBON	6.8K	5%	1/4W F
R25	1-249-431-11	CARBON	15K	5%	1/4W
R26	1-249-428-11	CARBON	8.2K	5%	1/4W F
R27	1-249-439-11	CARBON	68K	5%	1/4W
R28	1-249-426-11	CARBON	5.6K	5%	1/4W
R29	1-247-843-11	CARBON	3.3K	5%	1/4W
R30	1-247-843-11	CARBON	3.3K	5%	1/4W
R31	1-249-425-11	CARBON	4.7K	5%	1/4W F
R32	1-249-425-11	CARBON	4.7K	5%	1/4W F
R51	1-249-411-11	CARBON	330	5%	1/4W
R53	1-247-843-11	CARBON	3.3K	5%	1/4W
R54	1-249-425-11	CARBON	4.7K	5%	1/4W F
R55	1-249-441-11	CARBON	100K	5%	1/4W
R57	1-249-425-11	CARBON	4.7K	5%	1/4W F
R71	1-249-421-11	CARBON	2.2K	5%	1/4W F
R72	1-249-417-11	CARBON	1K	5%	1/4W F
R73	1-249-417-11	CARBON	1K	5%	1/4W F
R74	1-249-417-11	CARBON	1K	5%	1/4W F
R75	1-249-417-11	CARBON	1K	5%	1/4W F
R76	1-247-807-31	CARBON	100	5%	1/4W
R77	1-249-429-11	CARBON	10K	5%	1/4W
R78	1-249-429-11	CARBON	10K	5%	1/4W
R79	1-249-437-11	CARBON	47K	5%	1/4W
R80	1-249-417-11	CARBON	1K	5%	1/4W F
R82	1-247-807-31	CARBON	100	5%	1/4W
R83	1-249-426-11	CARBON	5.6K	5%	1/4W
R84	1-249-393-11	CARBON	10	5%	1/4W F
R85	1-249-413-11	CARBON	470	5%	1/4W F
R105	1-249-429-11	CARBON	10K	5%	1/4W
R106	1-249-429-11	CARBON	10K	5%	1/4W
R107	1-249-431-11	CARBON	15K	5%	1/4W
R108	1-249-431-11	CARBON	15K	5%	1/4W
R109	1-249-437-11	CARBON	47K	5%	1/4W
R110	1-249-437-11	CARBON	47K	5%	1/4W
R111	1-249-426-11	CARBON	5.6K	5%	1/4W
R112	1-249-426-11	CARBON	5.6K	5%	1/4W
R139	1-249-441-11	CARBON	100K	5%	1/4W
R140	1-249-441-11	CARBON	100K	5%	1/4W
R141	1-249-433-11	CARBON	22K	5%	1/4W
R142	1-249-433-11	CARBON	22K	5%	1/4W
R143	1-247-885-00	CARBON	180K	5%	1/4W
R144	1-247-885-00	CARBON	180K	5%	1/4W
R145	1-249-419-11	CARBON	1.5K	5%	1/4W F

Ref. No.	Part No.	Description			Remarks
R146	1-249-419-11	CARBON	1.5K	5%	1/4W F
R147	1-249-429-11	CARBON	10K	5%	1/4W
R148	1-249-429-11	CARBON	10K	5%	1/4W
R149	1-247-895-00	CARBON	470K	5%	1/4W
R150	1-247-895-00	CARBON	470K	5%	1/4W
R151	1-249-417-11	CARBON	1K	5%	1/4W F
R152	1-249-417-11	CARBON	1K	5%	1/4W F
R153	1-249-429-11	CARBON	10K	5%	1/4W
R154	1-249-429-11	CARBON	10K	5%	1/4W
R155	1-249-441-11	CARBON	100K	5%	1/4W
R156	1-249-415-11	CARBON	680	5%	1/4W F
R157	1-249-429-11	CARBON	10K	5%	1/4W
R158	1-249-429-11	CARBON	10K	5%	1/4W
R159	1-249-429-11	CARBON	10K	5%	1/4W
R160	1-249-429-11	CARBON	10K	5%	1/4W
R161	1-249-417-11	CARBON	1K	5%	1/4W F
R162	1-249-417-11	CARBON	1K	5%	1/4W F
R163	1-249-429-11	CARBON	10K	5%	1/4W
R164	1-249-429-11	CARBON	10K	5%	1/4W
R165	1-249-429-11	CARBON	10K	5%	1/4W
R166	1-249-429-11	CARBON	10K	5%	1/4W
R167	1-249-417-11	CARBON	1K	5%	1/4W F
R168	1-247-807-31	CARBON	100	5%	1/4W
R169	1-249-425-11	CARBON	4.7K	5%	1/4W F
R170	1-249-409-11	CARBON	220	5%	1/4W F
R171	1-247-807-31	CARBON	100	5%	1/4W
R172	1-249-437-11	CARBON	47K	5%	1/4W
R173	1-249-437-11	CARBON	47K	5%	1/4W
R175	1-249-409-11	CARBON	220	5%	1/4W F
R176	1-249-417-11	CARBON	1K	5%	1/4W F
R177	1-249-441-11	CARBON	100K	5%	1/4W
R178	1-247-903-00	CARBON	1M	5%	1/4W
R181	1-247-807-31	CARBON	100	5%	1/4W
R182	1-247-807-31	CARBON	100	5%	1/4W
R183	1-247-887-00	CARBON	220K	5%	1/4W
R184	1-247-887-00	CARBON	220K	5%	1/4W
R185	1-247-887-00	CARBON	220K	5%	1/4W
R186	1-247-887-00	CARBON	220K	5%	1/4W
R187	1-247-887-00	CARBON	220K	5%	1/4W
R188	1-247-887-00	CARBON	220K	5%	1/4W
R191	1-249-429-11	CARBON	10K	5%	1/4W
R192	1-249-429-11	CARBON	10K	5%	1/4W
R193	1-249-411-11	CARBON	330	5%	1/4W
R197	1-247-887-00	CARBON	220K	5%	1/4W
R198	1-249-425-11	CARBON	4.7K	5%	1/4W F
R201	1-249-417-11	CARBON	1K	5%	1/4W F
R202	1-249-417-11	CARBON	1K	5%	1/4W F
R203	1-249-433-11	CARBON	22K	5%	1/4W
R204	1-249-433-11	CARBON	22K	5%	1/4W
R205	1-249-417-11	CARBON	1K	5%	1/4W F
R206	1-249-417-11	CARBON	1K	5%	1/4W F
R207	1-249-433-11	CARBON	22K	5%	1/4W
R208	1-249-433-11	CARBON	22K	5%	1/4W
R209	1-249-417-11	CARBON	1K	5%	1/4W F
R210	1-247-807-31	CARBON	100	5%	1/4W
R211	1-249-433-11	CARBON	22K	5%	1/4W
R212	1-249-441-11	CARBON	100K	5%	1/4W
R215	1-249-417-11	CARBON	1K	5%	1/4W F
R221	1-247-891-00	CARBON	330K	5%	1/4W

Ref. No.	Part No.	Description			Remarks
R222	1-247-883-00	CARBON	150K	5%	1/4W
R223	1-249-437-11	CARBON	47K	5%	1/4W
R224	1-247-876-11	CARBON	75K	5%	1/4W
R225	1-249-437-11	CARBON	47K	5%	1/4W
R226	1-247-883-00	CARBON	150K	5%	1/4W
R227	1-247-876-11	CARBON	75K	5%	1/4W
R228	1-249-441-11	CARBON	100K	5%	1/4W
R229	1-249-441-11	CARBON	100K	5%	1/4W
R251	1-249-431-11	CARBON	15K	5%	1/4W
R252	1-247-843-11	CARBON	3.3K	5%	1/4W
R253	1-249-427-11	CARBON	6.8K	5%	1/4W F
R254	1-249-429-11	CARBON	10K	5%	1/4W
R255	1-249-429-11	CARBON	10K	5%	1/4W
R256	1-249-434-11	CARBON	27K	5%	1/4W
R257	1-249-429-11	CARBON	10K	5%	1/4W
R281	1-249-413-11	CARBON	470	5%	1/4W F
R282	1-249-413-11	CARBON	470	5%	1/4W F
R283	1-249-413-11	CARBON	470	5%	1/4W F
R375	1-249-415-11	CARBON	680	5%	1/4W F
R376	1-249-415-11	CARBON	680	5%	1/4W F
R377	1-249-421-11	CARBON	2.2K	5%	1/4W F
R378	1-249-421-11	CARBON	2.2K	5%	1/4W F
R381	1-247-843-11	CARBON	3.3K	5%	1/4W
R382	1-249-425-11	CARBON	4.7K	5%	1/4W F
R396	1-249-429-11	CARBON	10K	5%	1/4W
R401	1-249-437-11	CARBON	47K	5%	1/4W
R405	1-249-429-11	CARBON	10K	5%	1/4W
R411	1-249-437-11	CARBON	47K	5%	1/4W
R412	1-249-437-11	CARBON	47K	5%	1/4W
R414	1-249-429-11	CARBON	10K	5%	1/4W
R415	1-249-437-11	CARBON	47K	5%	1/4W
R416	1-249-437-11	CARBON	47K	5%	1/4W
R417	1-249-437-11	CARBON	47K	5%	1/4W
R418	1-249-437-11	CARBON	47K	5%	1/4W
R419	1-249-425-11	CARBON	4.7K	5%	1/4W F
R420	1-247-807-31	CARBON	100	5%	1/4W
R433	1-249-437-11	CARBON	47K	5%	1/4W
R434	1-249-437-11	CARBON	47K	5%	1/4W
R451	1-247-807-31	CARBON	100	5%	1/4W
R461	1-249-382-11	CARBON	1.2	5%	1/6W F
R462	1-249-382-11	CARBON	1.2	5%	1/6W F
R463	1-249-429-11	CARBON	10K	5%	1/4W
R464	1-247-850-11	CARBON	6.2K	5%	1/4W
R465	1-249-429-11	CARBON	10K	5%	1/4W
R466	1-249-428-11	CARBON	8.2K	5%	1/4W F
R471	1-249-420-11	CARBON	1.8K	5%	1/4W F
R472	1-249-420-11	CARBON	1.8K	5%	1/4W F
R473	1-247-881-00	CARBON	120K	5%	1/4W
R474	1-247-881-00	CARBON	120K	5%	1/4W
R475	1-249-441-11	CARBON	100K	5%	1/4W
R476	1-249-441-11	CARBON	100K	5%	1/4W
R477	1-249-425-11	CARBON	4.7K	5%	1/4W F
R478	1-249-425-11	CARBON	4.7K	5%	1/4W F
R479	1-249-409-11	CARBON	220	5%	1/4W F
R501	1-249-413-11	CARBON	470	5%	1/4W F
R502	1-249-425-11	CARBON	4.7K	5%	1/4W F
R519	1-247-843-11	CARBON	3.3K	5%	1/4W
R520	1-247-843-11	CARBON	3.3K	5%	1/4W
R521	1-247-807-31	CARBON	100	5%	1/4W
R522	1-247-807-31	CARBON	100	5%	1/4W
R523	1-247-807-31	CARBON	100	5%	1/4W
R524	1-247-807-31	CARBON	100	5%	1/4W
R525	1-249-437-11	CARBON	47K	5%	1/4W
R526	1-249-437-11	CARBON	47K	5%	1/4W
R527	1-247-876-11	CARBON	75K	5%	1/4W
R528	1-247-876-11	CARBON	75K	5%	1/4W
R529	1-247-876-11	CARBON	75K	5%	1/4W
R530	1-249-417-11	CARBON	1K	5%	1/4W F
R531	1-247-807-31	CARBON	100	5%	1/4W
R532	1-247-807-31	CARBON	100	5%	1/4W
R533	1-247-807-31	CARBON	100	5%	1/4W
R534	1-247-807-31	CARBON	100	5%	1/4W
R535	1-247-807-31	CARBON	100	5%	1/4W
R536	1-247-807-31	CARBON	100	5%	1/4W
R537	1-247-807-31	CARBON	100	5%	1/4W
R538	1-249-425-11	CARBON	4.7K	5%	1/4W F
R539	1-249-429-11	CARBON	10K	5%	1/4W
R540	1-249-429-11	CARBON	10K	5%	1/4W
R753	1-249-425-11	CARBON	4.7K	5%	1/4W F
R754	1-249-441-11	CARBON	100K	5%	1/4W
R755	1-249-421-11	CARBON	2.2K	5%	1/4W F
R901	1-249-386-11	CARBON	2.7	5%	1/6W F
R902	1-249-412-11	CARBON	390	5%	1/4W F
R903	1-249-425-11	CARBON	4.7K	5%	1/4W F
R904	1-247-807-31	CARBON	100	5%	1/4W
R905	1-249-425-11	CARBON	4.7K	5%	1/4W F
R906	1-249-421-11	CARBON	2.2K	5%	1/4W F
R907	1-249-421-11	CARBON	2.2K	5%	1/4W F
R908	1-249-421-11	CARBON	2.2K	5%	1/4W F
R909	1-249-417-11	CARBON	1K	5%	1/4W F
R910	1-249-429-11	CARBON	10K	5%	1/4W
R911	1-249-386-11	CARBON	2.7	5%	1/6W F
R921	1-249-435-11	CARBON	33K	5%	1/4W
R931	1-249-421-11	CARBON	2.2K	5%	1/4W F
R932	1-249-441-11	CARBON	100K	5%	1/4W
R933	1-249-429-11	CARBON	10K	5%	1/4W
R934	1-249-409-11	CARBON	220	5%	1/4W F
R935	1-249-409-11	CARBON	220	5%	1/4W F
R971	1-249-411-11	CARBON	330	5%	1/4W
R972	1-247-807-31	CARBON	100	5%	1/4W

< TRANSFORMER >

T1	1-476-190-11	RF BLOCK, MW
T2	1-233-885-11	ENCAPSULATED COMPONENT

< VIBRATOR >

X71	1-781-981-11	VIBRATOR, CRYSTAL(75kHz)
X401	1-579-175-11	VIBRATOR, CERAMIC(10MHz)
X511	1-781-966-11	VIBRATOR, CRYSTAL(10MHz)

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	A-4475-218-A	PANEL BOARD, COMPLETE		
		**********		
	4-230-338-01	HOLDER FL TUBE		
*	4-949-935-91	CUSHION (FL)		
	7-685-646-79	SCREW +BVTP	3X8	TYPE2 N-S

PANEL

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C601	1-124-584-00	ELECT	100uF	20%	10V
C602	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C603	1-126-157-11	ELECT	10uF	20%	16V
C604	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C605	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C606	1-126-163-11	ELECT	4.7uF	20%	50V
C608	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C609	1-124-584-00	ELECT	100uF	20%	10V
C610	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C611	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C612	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C613	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C614	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C615	1-126-160-11	ELECT	1uF	20%	50V
C617	1-126-160-11	ELECT	1uF	20%	50V
C621	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C622	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C623	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C624	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C625	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C626	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C627	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C628	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C629	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C630	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C631	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C632	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C633	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C641	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C642	1-126-157-11	ELECT	10uF	20%	16V
C643	1-126-157-11	ELECT	10uF	20%	16V
C644	1-124-584-00	ELECT	100uF	20%	10V
C645	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C646	1-163-037-11	CERAMIC CHIP	22000PF	10%	50V
C647	1-163-037-11	CERAMIC CHIP	22000PF	10%	50V
C648	1-163-037-11	CERAMIC CHIP	22000PF	10%	50V
C649	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C650	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C651	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< CONNECTOR >			
CN601	1-568-853-11	SOCKET, CONNECTOR 10P			
* CN602	1-506-486-11	PIN, CONNECTOR 7P			
* CN603	1-568-942-11	PIN, CONNECTOR 4P			
		< DIODE >			
D601	8-719-210-33	DIODE EC10DS2TE12L			
D632	8-719-080-73	DIODE L-1154GD(CD ►)			
D633	8-719-080-74	DIODE L-1154YD(CD ❚❚)			
D634	8-719-080-74	DIODE L-1154YD(❚❚ PAUSE)			
D635	8-719-080-72	DIODE L-1154HD(● REC)			
D638	8-719-080-71	DIODE L-1154ND(PROLOGIC)			
D639	8-719-080-71	DIODE L-1154ND(DVD 5.1CH)			
D657	8-719-080-71	DIODE L-1154ND(GROOVE)			
D662	8-719-080-73	DIODE L-1154GD(TAPE B ►)			
D663	8-719-080-73	DIODE L-1154GD(◄ TAPE B)			
D664	8-719-080-73	DIODE L-1154GD(TAPE A ►)			
D665	8-719-080-73	DIODE L-1154GD(◄ TAPE A)			
		< FERRITE BEAD >			
FB601	1-500-242-22	FERRITE	0UH		
FB602	1-500-242-22	FERRITE	0UH		
FB603	1-500-242-22	FERRITE	0UH		
FB604	1-500-242-22	FERRITE	0UH		
		< FILTER >			
FL601	1-517-773-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC601	8-759-675-37	IC TMP87CM74AF-1G57			
IC602	8-749-011-05	IC GP1U28X			
IC603	8-759-495-25	IC BA3833F-E2			
		< COIL >			
L601	1-408-777-00	INDUCTOR CHIP 10uH			
L602	1-408-777-00	INDUCTOR CHIP 10uH			
		< TRANSISTOR >			
Q621	8-729-620-05	TRANSISTOR 2SC2603TP-EF			
Q691	8-729-119-76	TRANSISTOR 2SA1115TP-EF			
Q692	8-729-119-76	TRANSISTOR 2SA1115TP-EF			
		< RESISTOR >			
R603	1-216-121-91	RES-CHIP	1M	5%	1/10W
R604	1-216-085-00	METAL CHIP	33K	5%	1/10W
R605	1-216-085-00	METAL CHIP	33K	5%	1/10W
R606	1-216-085-00	METAL CHIP	33K	5%	1/10W
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W
R608	1-216-073-00	METAL CHIP	10K	5%	1/10W
R609	1-216-073-00	METAL CHIP	10K	5%	1/10W
R610	1-216-073-00	METAL CHIP	10K	5%	1/10W
R611	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R612	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R613	1-216-025-91	RES-CHIP	100	5%	1/10W
R614	1-216-017-91	RES-CHIP	47	5%	1/10W
R615	1-216-009-91	RES-CHIP	22	5%	1/10W
R616	1-216-009-91	RES-CHIP	22	5%	1/10W
R618	1-216-107-00	METAL CHIP	270K	5%	1/10W
R619	1-216-097-91	RES-CHIP	100K	5%	1/10W
R620	1-216-085-00	METAL CHIP	33K	5%	1/10W
R621	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R622	1-216-089-91	RES-CHIP	47K	5%	1/10W
R623	1-216-073-00	METAL CHIP	10K	5%	1/10W
R624	1-216-097-91	RES-CHIP	100K	5%	1/10W
R631	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R632	1-216-033-00	METAL CHIP	220	5%	1/10W
R633	1-216-035-00	METAL CHIP	270	5%	1/10W
R634	1-216-039-00	METAL CHIP	390	5%	1/10W
R635	1-216-041-00	METAL CHIP	470	5%	1/10W
R636	1-216-045-00	METAL CHIP	680	5%	1/10W
R637	1-216-047-91	RES-CHIP	820	5%	1/10W
R638	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R639	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R640	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R641	1-216-061-00	METAL CHIP	3.3K	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R642	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R643	1-216-029-00	METAL CHIP	150	5%	1/10W
R644	1-216-029-00	METAL CHIP	150	5%	1/10W
R645	1-216-033-00	METAL CHIP	220	5%	1/10W
R646	1-216-033-00	METAL CHIP	220	5%	1/10W
R647	1-216-033-00	METAL CHIP	220	5%	1/10W
R648	1-216-033-00	METAL CHIP	220	5%	1/10W
R651	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R652	1-216-033-00	METAL CHIP	220	5%	1/10W
R653	1-216-035-00	METAL CHIP	270	5%	1/10W
R654	1-216-039-00	METAL CHIP	390	5%	1/10W
R655	1-216-041-00	METAL CHIP	470	5%	1/10W
R656	1-216-045-00	METAL CHIP	680	5%	1/10W
R657	1-216-047-91	RES-CHIP	820	5%	1/10W
R658	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R659	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R660	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R661	1-216-029-00	METAL CHIP	150	5%	1/10W
R662	1-216-033-00	METAL CHIP	220	5%	1/10W
R663	1-216-033-00	METAL CHIP	220	5%	1/10W
R664	1-216-033-00	METAL CHIP	220	5%	1/10W
R665	1-216-033-00	METAL CHIP	220	5%	1/10W
R671	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R681	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
		< SWITCH >			
S601	1-476-208-11	ENCODER, ROTARY(VOLUME)			
S602	1-476-189-11	ENCODER, ROTARY(SELECTOR)			
S631	1-762-875-21	SWITCH, KEYBOARD(◄ TAPE A ►)			
S632	1-762-875-21	SWITCH, KEYBOARD(■)			
S633	1-762-875-21	SWITCH, KEYBOARD(CD ►II)			
S634	1-762-875-21	SWITCH, KEYBOARD(II PAUSE)			
S635	1-762-875-21	SWITCH, KEYBOARD(● REC)			
S636	1-762-875-21	SWITCH, KEYBOARD(CD SYNCHRO)			
S637	1-762-875-21	SWITCH, KEYBOARD(PLUS ONE)			
S638	1-762-875-21	SWITCH, KEYBOARD(PROLOGIC)			
S639	1-762-875-21	SWITCH, KEYBOARD(DVD 5.1CH)			
S640	1-762-875-21	SWITCH, KEYBOARD(SEARCH)			
S641	1-762-875-21	SWITCH, KEYBOARD(SCAN)			
S642	1-762-875-21	SWITCH, KEYBOARD(IN PUT)			
S651	1-762-875-21	SWITCH, KEYBOARD(◄ TAPE B ►)			
S652	1-762-875-21	SWITCH, KEYBOARD(TUNER/BAND)			
S653	1-762-875-21	SWITCH, KEYBOARD(FILE SELECT)			
S654	1-762-875-21	SWITCH, KEYBOARD(I◄◄ ◄◄ –)			
S655	1-762-875-21	SWITCH, KEYBOARD(+ ►► ►►I)			
S656	1-762-875-21	SWITCH, KEYBOARD(ENTER)			
S657	1-762-875-21	SWITCH, KEYBOARD(GROOVE)			
S658	1-762-875-21	SWITCH, KEYBOARD(CHECK)			
S659	1-762-875-21	SWITCH, KEYBOARD(CLEAR)			
S660	1-762-875-21	SWITCH, KEYBOARD(DELETE)			
		< VIBRATOR >			
X601	1-579-952-21	VIBRATOR, CERAMIC(8MHz)			

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Ref. No.	Part No.	Description			Remarks
	1-677-239-11	PANEL L BOARD			
		**********			
		< DIODE >			
D672	8-719-080-72	DIODE L-1154HD(STANDBY)			
D675	8-719-080-72	DIODE L-1154HD(TIMER SELECT)			
		< RESISTOR >			
R672	1-216-033-00	METAL CHIP	220	5%	1/10W
R673	1-216-039-00	METAL CHIP	390	5%	1/10W
R674	1-216-039-00	METAL CHIP	390	5%	1/10W
R676	1-216-049-91	RES-CHIP	1K	5%	1/10W
R677	1-216-049-91	RES-CHIP	1K	5%	1/10W
		< SWITCH >			
S671	1-762-875-21	SWITCH, KEYBOARD(I/⏻)			
S672	1-762-875-21	SWITCH, KEYBOARD(DISPLAY)			
S673	1-762-875-21	SWITCH, KEYBOARD(CLOCK TIMER SET)			
S674	1-762-875-21	SWITCH, KEYBOARD(TIMER SELECT)			

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	1-677-240-11	PANEL R BOARD			
		**********			
		< DIODE >			
D682	8-719-080-71	DIODE L-1154ND(DSP)			
		< RESISTOR >			
R682	1-216-033-00	METAL CHIP	220	5%	1/10W
R683	1-216-035-00	METAL CHIP	270	5%	1/10W
R684	1-216-039-00	METAL CHIP	390	5%	1/10W
R685	1-216-041-00	METAL CHIP	470	5%	1/10W
R686	1-216-045-00	METAL CHIP	680	5%	1/10W
R687	1-216-033-00	METAL CHIP	220	5%	1/10W
		< SWITCH >			
S681	1-762-875-21	SWITCH, KEYBOARD(FUNCTION)			
S682	1-762-875-21	SWITCH, KEYBOARD(DSP)			
S683	1-762-875-21	SWITCH, KEYBOARD(DBFB)			
S684	1-762-875-21	SWITCH, KEYBOARD(STEREO/ MONO(CONTINUE))			
S685	1-762-875-21	SWITCH, KEYBOARD(TUNER MEMORY(PROGRAM))			
S686	1-762-875-21	SWITCH, KEYBOARD(DIRECTION(SHUFFLE))			

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	1-677-245-11	PHONE BOARD			
		**********			
		< JACK >			
HP801	1-793-096-11	JACK (LARGE TYPE)(PHONES)			

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	A-4475-219-A	REAR AMP BOARD, COMPLETE			
		**********			
	7-685-646-79	SCREW +BVTP	3X8	TYPE2 N-S	
		< CAPACITOR >			
C841	1-126-961-11	ELECT	2.2uF	20.00%	50V
C842	1-126-961-11	ELECT	2.2uF	20.00%	50V

REAR AMP

Ref. No.	Part No.	Description			Remarks
C843	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C844	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C845	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C846	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C847	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C848	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C849	1-126-967-11	ELECT	47uF	20.00%	50V
C850	1-126-967-11	ELECT	47uF	20.00%	50V
C851	1-136-495-11	MYLAR	0.068uF	5.00%	50V
C852	1-136-495-11	MYLAR	0.068uF	5.00%	50V
C853	1-136-495-11	MYLAR	0.068uF	5.00%	50V
C854	1-136-495-11	MYLAR	0.068uF	5.00%	50V
C861	1-126-948-11	ELECT	100uF	20.00%	35V
C862	1-126-948-11	ELECT	100uF	20.00%	35V
C863	1-126-964-11	ELECT	10uF	20.00%	50V
C864	1-126-964-11	ELECT	10uF	20.00%	50V
C881	1-126-961-11	ELECT	2.2uF	20.00%	50V
C882	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C883	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C884	1-163-220-11	CERAMIC CHIP	3PF	0.25PF	50V
C885	1-126-967-11	ELECT	47uF	20.00%	50V
C886	1-136-495-11	MYLAR	0.068uF	5.00%	50V
C887	1-136-495-11	MYLAR	0.068uF	5.00%	50V
C961	1-106-220-00	MYLAR	0.1uF	5%	100V
C962	1-106-220-00	MYLAR	0.1uF	5%	100V
C963	1-128-549-11	ELECT	3300uF	20.00%	35V
C964	1-128-549-11	ELECT	3300uF	20.00%	35V
		< CONNECTOR >			
* CN851	1-564-509-11	PLUG, CONNECTOR 6P			
CN701B	1-506-469-11	PIN, CONNECTOR 4P			
		< DIODE >			
D771	8-719-988-61	DIODE 1SS355TE-17			
D841	8-719-988-61	DIODE 1SS355TE-17			
D842	8-719-988-61	DIODE 1SS355TE-17			
D881	8-719-988-61	DIODE 1SS355TE-17			
D882	8-719-988-61	DIODE 1SS355TE-17			
D883	8-719-024-99	DIODE 11ES2-NTA2B			
D961	8-719-080-79	DIODE TS4B02G			
		< IC >			
IC831	8-749-017-97	IC STK402-240			
		< COIL >			
L841	1-419-686-11	COIL, AIR-CORE			
L842	1-419-686-11	COIL, AIR-CORE			
		< TRANSISTOR >			
Q291	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q292	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q293	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q771	8-729-026-39	TRANSISTOR 2SA933AS-QRT			
Q772	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q841	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q842	8-729-119-78	TRANSISTOR 2SC1740S-QRT			
Q881	8-729-119-78	TRANSISTOR 2SC1740S-QRT			

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R257	1-216-049-91	RES-CHIP	1K	5%	1/10W
R258	1-216-049-91	RES-CHIP	1K	5%	1/10W
R259	1-216-097-91	RES-CHIP	100K	5%	1/10W
R260	1-216-097-91	RES-CHIP	100K	5%	1/10W
R261	1-216-073-00	METAL CHIP	10K	5%	1/10W
R262	1-216-073-00	METAL CHIP	10K	5%	1/10W
R291	1-216-049-91	RES-CHIP	1K	5%	1/10W
R292	1-216-097-91	RES-CHIP	100K	5%	1/10W
R293	1-216-073-00	METAL CHIP	10K	5%	1/10W
R771	1-216-073-00	METAL CHIP	10K	5%	1/10W
R772	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R773	1-216-081-00	METAL CHIP	22K	5%	1/10W
R774	1-249-406-11	CARBON	120	5%	1/4W F
R841	1-216-049-91	RES-CHIP	1K	5%	1/10W
R842	1-216-049-91	RES-CHIP	1K	5%	1/10W
R843	1-216-089-91	RES-CHIP	47K	5%	1/10W
R844	1-216-089-91	RES-CHIP	47K	5%	1/10W
R845	1-216-089-91	RES-CHIP	47K	5%	1/10W
R846	1-216-089-91	RES-CHIP	47K	5%	1/10W
R847	1-216-041-00	METAL CHIP	470	5%	1/10W
R848	1-216-041-00	METAL CHIP	470	5%	1/10W
R849	1-220-755-11	METAL	0.22	10%	2W
R850	1-220-755-11	METAL	0.22	10%	2W
R851	1-249-397-11	CARBON	22	5%	1/4W F
R852	1-249-397-11	CARBON	22	5%	1/4W F
R853	1-249-397-11	CARBON	22	5%	1/4W F
R854	1-249-397-11	CARBON	22	5%	1/4W F
R855	1-249-397-11	CARBON	22	5%	1/4W F
R856	1-249-397-11	CARBON	22	5%	1/4W F
R857	1-249-397-11	CARBON	22	5%	1/4W F
R858	1-249-397-11	CARBON	22	5%	1/4W F
⚠ R863	1-212-881-11	FUSIBLE	100	5%	1/4W
⚠ R864	1-212-881-11	FUSIBLE	100	5%	1/4W
R865	1-216-049-91	RES-CHIP	1K	5%	1/10W
R866	1-216-049-91	RES-CHIP	1K	5%	1/10W
R867	1-216-097-91	RES-CHIP	100K	5%	1/10W
R868	1-216-097-91	RES-CHIP	100K	5%	1/10W
R869	1-216-077-91	RES-CHIP	15K	5%	1/10W
R870	1-216-077-91	RES-CHIP	15K	5%	1/10W
R871	1-216-085-00	METAL CHIP	33K	5%	1/10W
R872	1-216-083-00	METAL CHIP	27K	5%	1/10W
R873	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R874	1-249-425-11	CARBON	4.7K	5%	1/4W F
R881	1-216-049-91	RES-CHIP	1K	5%	1/10W
R882	1-216-089-91	RES-CHIP	47K	5%	1/10W
R883	1-216-089-91	RES-CHIP	47K	5%	1/10W
R884	1-216-041-00	METAL CHIP	470	5%	1/10W
R885	1-220-755-11	METAL	0.22	10%	2W
R886	1-249-397-11	CARBON	22	5%	1/4W F
R887	1-249-397-11	CARBON	22	5%	1/4W F
R892	1-216-049-91	RES-CHIP	1K	5%	1/10W
R893	1-216-097-91	RES-CHIP	100K	5%	1/10W
R894	1-216-077-91	RES-CHIP	15K	5%	1/10W
R895	1-220-755-11	METAL	0.22	10%	2W
R896	1-220-755-11	METAL	0.22	10%	2W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
R897	1-220-755-11	METAL	0.22	10%	2W
		< RELAY >			
RY771	1-515-920-11	RELAY (24V)			
RY772	1-515-920-11	RELAY (24V)			
**********					
	1-677-249-11	REAR SP TERM BOARD			
		**********			
		< COIL >			
L881	1-419-686-11	COIL, AIR-CORE			
		< RESISTOR >			
R888	1-249-397-11	CARBON	22	5%	1/4W F
R889	1-249-397-11	CARBON	22	5%	1/4W F
**********					
	1-677-247-11	SUB TRANS BOARD			
		**********			
		< CAPACITOR >			
C931	1-164-159-11	CERAMIC	0.1uF		50V
C932	1-164-159-11	CERAMIC	0.1uF		50V
C933	1-164-159-11	CERAMIC	0.1uF		50V
C934	1-164-159-11	CERAMIC	0.1uF		50V
C936	1-126-942-61	ELECT	1000uF	20.00%	25V
C938	1-164-159-11	CERAMIC	0.1uF		50V
C939	1-104-665-11	ELECT	100uF	20.00%	10V
		< CONNECTOR >			
CN995	1-564-321-00	PIN, CONNECTOR 2P			
CN997	1-506-468-11	PIN, CONNECTOR 3P			
		< DIODE >			
D931	8-719-024-99	DIODE 11ES2-NTA2B			
D932	8-719-024-99	DIODE 11ES2-NTA2B			
D933	8-719-024-99	DIODE 11ES2-NTA2B			
D934	8-719-024-99	DIODE 11ES2-NTA2B			
D938	8-719-024-99	DIODE 11ES2-NTA2B			
D939	8-719-024-99	DIODE 11ES2-NTA2B			
D991	8-719-024-99	DIODE 11ES2-NTA2B			
		< IC >			
IC931	8-759-701-56	IC NJM78M05FA			
		< TRANSISTOR >			
Q991	8-729-029-66	TRANSISTOR DTC114ESA-TP			
		< RELAY >			
⚠RY991	1-755-409-11	RELAY			
		< TRANSFORMER >			
⚠T992	1-435-613-11	TRANSFORMER, POWER			
**********					

Ref. No.	Part No.	Description			Remarks
*	1-663-975-11	SW BOARD			
		**********			
		< CONNECTOR >			
* CN54	1-568-941-11	PIN, CONNECTOR 3P			
		< SWITCH >			
S51	1-571-958-11	SWITCH, PUSH (1 KEY)(UP)			
S52	1-571-958-11	SWITCH, PUSH (1 KEY)(DOWN)			
**********					
*	1-663-971-11	TABLE SENSOR BOARD			
		**********			
		< CONNECTOR >			
* CN51	1-568-944-11	PIN, CONNECTOR 6P			
CN52	1-506-481-11	PIN, CONNECTOR 2P			
		< IC >			
IC51	8-749-924-18	PHOTO INTERRUPTER RPI-1391			
IC52	8-749-924-18	PHOTO INTERRUPTER RPI-1391			
IC53	8-749-924-18	PHOTO INTERRUPTER RPI-1391			
		< RESISTOR >			
R51	1-249-416-11	CARBON	820	5%	1/4W F
R52	1-249-416-11	CARBON	820	5%	1/4W F
R53	1-249-416-11	CARBON	820	5%	1/4W F
**********					
	1-677-242-11	TRANS BOARD			
		**********			
	1-533-233-	HOLDER, FUSE			
		< CAPACITOR >			
C935	1-106-220-00	MYLAR	0.1uF	5%	100V
C937	1-126-968-11	ELECT	100uF	20.00%	50V
		< CONNECTOR >			
* CN992	1-564-519-11	PLUG, CONNECTOR 4P			
* CN993	1-564-518-11	PLUG, CONNECTOR 3P			
* CN994	1-564-520-11	PLUG, CONNECTOR 5P			
		< DIODE >			
D935	8-719-024-99	DIODE 11ES2-NTA2B			
		< FUSE >			
⚠F992	1-533-420-11	FUSE, GLASS CYLINDRICAL (DIA.5) (5A 125V)			
		< RESISTOR >			
⚠R991	1-219-122-91	FUSIBLE	0.33	5%	1/4W
⚠R995	1-202-725-00	SOLID	3.3M	10%	1/2W
⚠R998	1-212-881-11	FUSIBLE	100	5%	1/4W
		< TRANSFORMER >			
⚠T991	1-435-560-11	TRANSFORMER, POWER			
**********					

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS	
		**********	
7	1-757-074-11	WIRE (FLAT TYPE) (12 CORE)	
8	1-773-055-11	WIRE (FLAT TYPE) (17 CORE)	
10	1-757-073-11	WIRE (FLAT TYPE) (10 CORE)	
111	1-783-531-11	CORD, POWER	
113	1-782-558-21	WIRE (FLAT TYPE) (16 CORE)	
114	1-769-920-11	WIRE (FLAT TYPE) (9 CORE)	
322	1-777-874-11	WIRE (FLAT TYPE) (16 CORE)	
401	8-820-026-03	OPTICAL PICK-UP KSM-213BFN/C2NP	
M61	X-4948-434-1	MOTOR ASSY (LOADING)	
M62	X-4948-434-1	MOTOR ASSY (TABLE)	
M101	X-2646-110-1	T.T CHASSIS ASSY (MG)(F)(SPINDLE)	
M102	X-2625-769-1	MOTOR GEAR ASSY (MB)(RP)(SLED)	
M751	1-763-548-11	MOTOR, DC FAN	
T991	1-435-560-11	TRANSFORMER, POWER	
T992	1-435-613-11	TRANSFORMER, POWER	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.1	2001.07	Correction of exploded views (66, 69, 70). (SPM-01027)
1.0	2000.06	New